DEPARTMENT OF
PSYCHIATRY & NDDTC
AIIMS - NEW DELHI

INDIAN
ASSOCIATION FOR
SOCIAL PSYCHIATRY

1ST EDITION

Handbook of Consultation Liaison Psychiatry

2020

EDITORS:
Rakesh K. Chadda
Mamta Sood
Siddharth Sarkar

Handbook of Consultation Liaison Psychiatry

Editors:

Rakesh K. Chadda
MD, FAMS, FRCPsych, DFAPA
Professor & Head, Department of Psychiatry
Chief, National Drug Dependence Treatment Centre
All India Institute of Medical Sciences
New Delhi-110029

Mamta Sood
MD, DPM
Professor of Psychiatry
All India Institute of Medical Sciences
New Delhi-110029

Siddharth Sarkar
MD, DNB
Associate Professor of Psychiatry
All India Institute of Medical Sciences
New Delhi-110029

Foreword by:

Professor Randeep Guleria
Director
All India Institute of Medical Sciences
New Delhi-110029

Published by:
Department of Psychiatry
All India Institute of Medical Sciences
New Delhi-110029

With Support from:
Indian Association for Social Psychiatry

Department of Psychiatry
All India Institute of Medical Sciences
New Delhi-110029

First Edition: 2020

ISBN: 978-93-5407-984-9

Cover Designed by **Dr Koushik Sinha Deb**

Printed in India at **AAR Computers,** Delhi
Typeset at In-house

Publishing for
Department of Psychiatry
All India Institute of Medical Sciences
New Delhi-110029

Foreword

The book "Handbook on Consultation Liaison Psychiatry" is a relevant read for today's doctors of any discipline. Many medical illnesses are related to psychiatric disorders. Also, behavioural issues in patients presenting with medical illnesses can offer challenges in treatment. Thus, clinicians from any specialty are likely to encounter patients with psychological issues in their clinical practice at some point of time or another. Hence, understanding how psychiatric disorders can be best handled in the clinical care process is likely to be useful for clinicians. Discussion and referral to colleagues from psychiatry can be pertinent in some clinical situations, where guidance and collaborative care can be beneficial for overall patient care.

Consultation liaison psychiatry as a field deals with interface between medical disorders and psychiatric disorders. This handbook on consultation liaison psychiatry covers a wide range of topics like contextual aspects of doing consultation liaison psychiatry, managing agitated or suicidal patient, stress, death and dying, transplantation, chronic medical illnesses, and communication. All of these topics hold significance for a medical practitioner who sees a variety of patients. Several aspects relevant to care of the patients are presented in a lucid manner in these chapters. The 14 chapters in this handbook are a breezy read for the busy clinician who would like to be acquainted about when and how to deal with patients in different medical and surgical specialties presenting with psychiatric symptoms. A unique feature of the book is consideration of the Indian clinical care scenarios that spans from busy government and private hospitals to private clinics and primary health-care centres. Also, emphasis has been laid on initial and continued training of doctors, so that skill enhancement occurs continually.

The book would be of use not only to psychiatrists, but also internists, surgeons, paediatricians, and other specialists. Both trainees and experts are likely to be benefitted. The chapters are easy to follow through and are supported with relevant references to stimulate further reading. The contributions from eminent practitioners from various leading institutions of India provide an in-depth perspective on various aspects of consultation liaison psychiatry. I must congratulate the editors for bringing a timely and relevant book on this discipline. They have carefully chosen topics that I am sure would appeal to readers. I hope that this book would become a standard read for anyone who would like to grasp more about consultation liaison psychiatry.

Professor Randeep Guleria
Director
All India Institute of Medical Sciences, New Delhi, India

Blank

Message

I am glad that Professor Rakesh Chadda and his magnificent team at AIIMS, New Delhi are bringing the proceedings of the First CME of the IASP in form of **Handbook of Consultation Liaison Psychiatry.** The list of the topics covered show the brilliance of the editors who are able to bring the top talents working in this field in India.

I know it took some time and the process got delayed but it is really commendable that the team kept its promise and despite various hurdles and the unprecedented difficulties due to COVID pandemic, they are successful in launching this important book and showcase this landmark event of IASP.

The content is carved to address the specific needs of our country, making it socially relevant and culturally sensitive. Topics like liaison services in community setting and extending the principles of CL Psychiatry in specialties like addiction psychiatry and transplant surgery will address most of the emerging problems in the contemporary psychiatry.

To put things another way, this book will serve as a source of stimulus and inspiration to those who are working in the field of mental health and will go a long way in the history of Indian Association for Social Psychiatry and CL Psychiatry in India.

I hope the erudite contents of the book will be a great source for learning skills and knowledge about the complexities of this important field.

Dr. Rajiv Gupta
President (2016-2018), Indian Association for Social Psychiatry
Director-cum-CEO
Institute of Mental Health
Pt. Bhagwat Dayal Sharma University of Health Sciences, Rohtak

Blank

Preface

Consultation Liaison (CL) Psychiatry is one of the most important sub-specialities of psychiatry. It is vital to mental health care in general hospital settings, but its need, though well recognised, gets ignored in medical settings for various reasons. CL psychiatry works at the interface of psychiatry and other medical and surgical disciplines. It is a known fact that mental health problems are common in patients attending various medical settings for their apparent physical manifestations. This is true for both outpatient as well as inpatient settings and also in primary, secondary and tertiary care. The treating clinician at times is not well equipped to identify and manage the mental health issues, which include psychosocial issues, stress related problems and also diagnosable mental disorders. In addition, often the clinicians, especially those in the beginning of their career, lack skills at how to communicate with the patient to elicit such issues. CL psychiatry aims at providing solutions to all these issues.

The "Handbook of Consultation Liaison Psychiatry aims to discuss the concept of CL Psychiatry and its evolution around the world with a special focus to India and other low resource settings. The compilation is predominantly based on the presentations made at the National CME on Consultation Liaison Psychiatry, held on 9th April 2018 at the All India Institute of Medical Sciences, New Delhi. Since the focus is on clinical application, to make it useful for any clinician working in a general hospital, we have included chapters on common mental health problems like medically unexplained somatic symptoms, suicidal risk and substance use problems.

The book begins with a chapter on "Consultation-liaison psychiatry in Indian context: Current status and future perspectives". Authors trace the evolution of the field globally and discuss various models of CL psychiatry. The basic functions of CL psychiatry are presented. The challenges to CL psychiatry in India at the primary care level, outpatient services, private clinical settings and in inpatient and intensive care are elaborated. The approaches that can be used to strengthen the CL psychiatry services are discussed.

The next chapter (Chapter 2) discusses how CL psychiatry can be adapted in low resource settings. Challenges experienced in the low resource settings and possible solutions are discussed. The integration of CL psychiatry services with the general hospital psychiatry units in various teaching centres is highlighted. Possible means and mechanisms of expansion of CL psychiatry at primary, secondary and tertiary care levels in resource constrained settings

are presented. The unique considerations for assessment in CL psychiatry are presented along with scope for future innovations and possibilities of developing the sub-specialty.

Communication with non-psychiatrist clinicians is vital to the field of CL psychiatry, and is the focus of chapter 3. There is often a significant communication gap seen between psychiatrists and other health professionals, owing to the stigma surrounding psychiatry and patients having mental disorders, perceived lack of seriousness towards psychiatry among health professionals, and the lack of exposure due to inadequate psychiatric training. The strategies for enhancing the communication by developing a common language and expanding training of medical graduates in psychiatry are emphasized.

Subsequent chapters focus on specific mental health problems seen in general hospitals. There is a chapter on assessment and management of agitated patients in general hospital settings (Chapter 4). The chapter discusses epidemiology, risk factors, aetiology and assessment of agitation. The chapter thereafter discusses the management approaches to deal with aggression, including pharmacological and non-pharmacological methods. Thereafter, assessment and management of suicide attempts in the emergency setting is discussed as a separate chapter (Chapter 5). The issues in assessment of cases, coupled with various management approaches are presented, including medico-legal issues.

Medically unexplained somatic symptoms and stress are two important areas which offer a big challenge to the physician and the mental health professionals. Chapters 6 and 7 focus on these two areas. Medically unexplained somatic symptoms often lead to repeated consults and burden the health care services. The approaches to assessment of medically unexplained symptoms are discussed in chapter 6, along with the options of managing these cases. The subsequent chapter explores managing stress in the general hospital. The impact of stress on medical illness is explored along with screening and recognition of stress-related conditions in general hospital settings. Various approaches of handling stress are alluded to in this chapter.

Chapter 8 discusses assessment and management of mental health problems in chronic medical illnesses. The chapter highlights some of the chronic physical illnesses like diabetes and cardiovascular disorders associated with mental health problems. Guidelines are provided for conducting a thorough assessment of patients. Managing mental health issues in patients with chronic physical illnesses is subsequently presented. Treatment of non-adherence, a common problem in patients with chronic illnesses, and the ways to address it is subsequently presented.

The book also has an exclusive chapter (Chapter 9) on assessment and management of mental health problems in paediatric settings which discusses assessment and management of behavioural problems in the children and adolescents. The next chapter (Chapter 10) deals with mental health issues in end of life care. Palliative care is a big challenge emerging in general hospitals, where mental health professionals have an important role. Issues in palliative care including breaking bad news and pharmacological and non-pharmacological management in end of life care are presented in this chapter.

Liaison psychiatry in community setting is an important area which is often not discussed. This book has an exclusive chapter (Chapter 11) on the topic. This chapter explores the need and challenges of implementing CL psychiatry services at the community level, the unique issues in the Indian service setting, and the models of providing CL psychiatry services which have relevance to low resource settings.

Psychosocial issues in transplant surgery are discussed in Chapter 12. The issues of evaluation of the recipients and donors are presented. The peri-operative and post-operative psychiatric and psycho-social issues like adherence to the medical regimen, financial stability, psychiatric disorders, and familial and social support in the management of transplant recipients are presented in this chapter.

Chapter 13 presents CL addiction psychiatry as an evolving discipline. Since a substantial number of patients admitted to different speciality settings in general hospitals suffer from substance use disorders, psychiatrists are called in for the management of such patients. The chapter discusses the medical conditions in relation to substance use disorders, and highlights the gradually evolving addiction consultation liaison services in India.

The last chapter (Chapter 14) on use of psychotropics in medically ill population has great potential utility both for psychiatrists and physicians, since it very lucidly covers use of psychotropics in a range of medical disciplines, age groups and also during pregnancy.

Overall, this handbook presents the various facets of CL psychiatry, and is likely to be of use to practitioners in the field of psychiatry and other disciplines. The reading would also be of use to medical students and residents to understand interface of psychiatry and other medical/surgical departments. CL psychiatry has gradually emerged as an important paradigm of care and continues to evolve further to provide better care to patients.

R.K. Chadda, M. Sood, S. Sarkar

Blank

Contents

Handbook of Consultation Liaison Psychiatry

List of Contributors

Aishwariya Brigit George
Department of Psychiatry and
National Drug Dependence Treatment Centre,
All India Institute of Medical Sciences, New Delhi -110029
Email: aishwariyabrigitgeorge@gmail.com

Ajit Avasthi
Department of Psychiatry,
Post Graduate Institute of Medical Education & Research,
Chandigarh 160012
Email: drajitavasthi@yahoo.co.in

Aniruddha Basu
Department of Psychiatry,
All India Institute of Medical Sciences,
Rishikesh - 249203
Email: draniruddhabasu@gmail.com

Ankit Gupta
Department of Psychiatry & National Drug Dependence Treatment Centre
All India Institute of Medical Sciences,
New Delhi 110029
Email: ankitg.aiims@gmail.com

Bichitra N. Patra
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi-110029
Email: patrab.aiims@gmail.com

Gagan Hans
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi-110029
Email: gaganhans23 @gmail.com

Himanshu Singla
Department of Psychiatry,
Post Graduate Institute of Medical Education and Research,
Chandigarh- 160012
Email: hmsingla31@gmail.com

Kiran Jakhar
Department of Psychiatry,
Government Institute of Medical Sciences ,
Greater Noida
Email: kjakhar48@gmail.com

Mamta Sood
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi -110029
Email: soodmamta@grnail.com

Koushik Sinha Deb
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi -110029
Email: koushik.sinha.deb@gmail.com

Mukesh Kumar Swami
Department of Psychiatry,
All India Institute of Medical Sciences,
Jodhpur, Rajasthan - 342005
Email: mukesh.swami@grnail.com

Naresh Nebhinani
Department of Psychiatry,
All India Institute of Medical Sciences,
Jodhpur, Rajasthan - 342005
Email: drnaresh_pgi@yahoo.com

Nidhi Chauhan
Department of Psychiatry,
Government Medical College & Hospital,
Chandigarh - 160032
Email: dr.nidhichauhan@grnail.com

Nishtha Chawla
Department of Psychiatry,
All India Institute of Medical Sciences,
NewDelhi-110029
Email: nishtha.chawla@gmail.com

Pallavi Rajhans
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi -110029
Email: pallavirajhans525@gmail.com

Parvesh Batra
Department of Psychiatry,
Post Graduate Institute of Medical Sciences,
Rohtak - 124514
Email: parveshbatra84@gmail.com

Prashant Gupta
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi-110029
Email: pg_aiims@yahoo.co.in

Pratap Sharan
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi-110029
Email: pratapsharan@gmail.com

Rakesh K. Chadda
Department of Psychiatry & National Drug Dependence Treatment Centre
All India Institute of Medical Sciences
New Delhi 110029
Email: drrakeshchadda@gmail.com

Raman Deep
Department of Psychiatry,
All India Institute of Medical Sciences,
New Delhi -110029
Email: drramandeep@gmail.com

Ravindra Rao
Department of Psychiatry and National Drug Dependence Treatment Centre,
All India Institute of Medical Sciences, New Delhi -110029
Email: drrvrao@gmail.com

Rohit Verma

Department of Psychiatry,
All India Institute of Medical Sciences, New Delhi-110029
Email: rohit.aiims@gmail.com

Sai Chaitanya Reddy

Department of Psychiatry,
Post Graduate Institute of Medical Education and Research,
Chandigarh -160012
Email: chaitanyareddy557@gmail.com

Sandeep Grover

Department of Psychiatry,
Post Graduate Institute of Medical Education & Research,
Chandigarh 160012
Email: drsandeepg2002@yahoo.com

Srinivas Rajkumar

Department of Psychiatry,
All India Institute of Medical Sciences, New Delhi-110029
Email: sri.nivasmbbs@gmail.com

Susanta Kumar Padhy

Department of Psychiatry,
Post Graduate Institute of Medical Education and Research,
Chandigarh 160012
Email: drsusanta_padhy2001@yahoo.co.in

Swapnajeet Sahoo

Department of Psychiatry,
Post Graduate Institute of Medical Education & Research,
Chandigarh 160012
Email: swapnajit.same@gmail.com

Udit K. Panda

Department of Psychiatry,
All India Institute of Medical Sciences, New Delhi-110029
Email: uditpanda@gmail.com

Blank

Chapter 1

Consultation-Liaison Psychiatry in Indian Context: Current Status & Future perspectives

Ajit Avasthi, Swapnajeet Sahoo, Sandeep Grover
Department of Psychiatry, Post Graduate Institute of Medical Education & Research, Chandigarh 160012

Abstract:

Consultation-Liaison (CL) Psychiatry has been identified as a sub-specialty of psychiatry since 1971. The main aim of this subspecialty is to provide psychiatric consultation services to medical /surgical inpatients when referred for a psychiatric problem by their primary physicians. However, over the years, the scope of CL Psychiatry has broadened and now it has many more functions in addition to the primary function of providing psychiatric consultation. Several models of CL Psychiatry have been developed. There are several challenges for the delivery of CL Psychiatry services at each level of health care (primary health care level/ private clinic setting/ inpatient setting/ outpatient setting/ emergency setting). With regard to India, these challenges become even more difficult to face due to the lack of adequate manpower, lack of adequate awareness among medical professionals as well as due to lack of proper policies/ health care systems/ guidelines. However, these challenges can be met if certain modifications in current existing CL Psychiatry services are made in order to improve and improvise the future of CL Psychiatry in India.

Key words: *Consultation, liaison, psychiatry, psychosomatic*

Introduction

'Consultation' in psychiatric practice refers to the provision of expert opinion about the diagnosis and advice on management regarding a patient's mental state and behaviour, whereas, ***'Liaison'*** refers to linking up of groups for the purpose of effective collaboration (mediation between patient and members of the clinical team and between mental health professionals and other health professionals.[1] The concept of ***Consultation-Liaison Psychiatry*** (CL Psychiatry) is derived from these two words.

Way back in 1971, Lipowski[2] defined CL Psychiatry *"the area of clinical psychiatry that encompasses clinical, teaching and research activities of psychiatrists and allied mental health professionals in the non-psychiatric divisions of a general hospital",* and the same holds good at current date too. The main framework of CL Psychiatry is the provision of psychiatric consultation services to medical and surgical inpatients when referred by their primary care providers for a psychiatric problem. Additionally, this task implies the education of the consultee, nurses and medical students about common affective, behavioural, and cognitive disorders in the general hospital settings. Thereby, through the process of liaising, CL Psychiatry helps in integration of care rather than integrated care by a single clinician[3] CL Psychiatry, as a part of psychosomatic medicine, has now become an important area of service and research in general hospital psychiatry.[4] CL Psychiatry has its origin from general hospital psychiatry and psychosomatic medicine and has also been considered as ***a clinical derivative and applied form of psychosomatic medicine***.[5-7] Till date, in India, CL Psychiatry is still considered as a part of general adult psychiatry which is in contrast to the Western countries (USA and Europe), where CL Psychiatry is regarded a subspecialty of psychiatry.[8,9]

CL psychiatrists are a group of physicians within psychiatry who have specific training and specialized expertise in the diagnosis and treatment of psychiatric disorders in patients with concurrent physical and psychiatric illness. In addition, they have special expertise in treatment modalities that often require multidisciplinary collaboration, such as electroconvulsive therapy and deep brain stimulation, or are targeted for special needs of such patients like psychological and behavioural therapies.[10] All in all, a CL psychiatrist has to play multiple roles i.e. as a medical expert, communicator, collaborator, supervisor, health advocate, scholar and a psychiatric professional.[10] In other words, a CL psychiatrist has greater responsibilities and thereby should be well versed with medical/surgical knowledge in addition to basic psychiatric knowledge and clinical skills.

Basic functions of CL Psychiatry

Common psychiatric problems encountered in the medical/surgical inpatients can be grouped under 4 basic groups.[11]

(1) **Psychological presentation of an organic disease** (conditions such as epilepsy or pheochromocytoma may give rise to anxiety symptoms indistinguishable clinically from those accompanying a primary psychiatric illness)

(2) **Psychological complications of an organic disease** (delirium due to various causes, substance withdrawal, etc.)

(3) **Psychological reactions to an organic disease** (psychological stress/trauma following or upon knowing prognosis, disclosure of a life-threatening illness or end stage illness)

(4) **Somatic presentation of psychiatric disorders** (depression, panic attacks, hypochondriasis, dissociative disorders, etc.). CL Psychiatry services are required to diagnose and treat these frequently encountered situations in hospital inpatients or in the emergency settings.

A psychiatrist should know the common reasons for referral to CL Psychiatry services by the primary treating physician/surgeons.[12-14] Some of these reasons are evaluation of a subject with suspected psychiatric disorder, past psychiatric history or currently on psychotropic medications, acute agitation, self-harm attempt/suspected self-harm attempt, known or suspected substance abuse or drug overdose, etc.

Proposed Models of CL Psychiatry & Models being practiced in India

There are 6 types of models proposed for CL Psychiatry services across the world: [15] consultation model, liaison model, bridge model, hybrid model, autonomous psychiatric model, and postgraduate specialty training model. The details are enlisted in Table 1.

Table 1: Models of CL Psychiatry [15]

Model	
Consultation Model	Traditional model in which patient is the primary focus of the consultant's interest
Liaison Model	Consulting physician is the focus. Components include providing consultation for the patient and teaching psychia tric/psychological aspects of patient's problem to the physician and the clinical team
Bridge Model	C-L psychiatrist plays a teaching role for the primary care physicians. A psychiatrist is assigned to a primary care teaching site in a structured program
Hybrid Model	Psychiatrist is a part of multidisciplinary team
Autonomous Psychiatric Model	The C-L psychiatrist is not affiliated to any department but is hired by primary health care (PHC) services
Postgraduate specialty training model	Physician is trained in a mental health setting for 1-2 years

Unfortunately, the practice of CL psychiatry is not well described in India.[8,9] Based on the available studies from India, broadly the CL Psychiatry services at various centres focus on inpatient and outpatient subjects. In India, mostly the consultation model is followed, in which upon receiving a referral, a psychiatrist evaluates the patient and provides appropriate psychiatric management.

The CL Psychiatry model followed in the Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India can be regarded as somewhat better refined model of CL Psychiatry services in India. In this model, the referral call is sent to the CL Psychiatry team by the treating physician/ surgeon regarding patient admitted in the medical/surgical wards as well as from emergency services. Upon receiving the call, the patient is attended by a post graduate trainee (junior resident) under the supervision of a trained psychiatrist (senior resident) and basic psychiatric inputs are provided. The patient's clinical condition is discussed with a senior psychiatrist (consultant psychiatrist) and appropriate management is provided during the active follow-ups which are done regularly so long the patient has the psychiatric condition and/or is admitted in the hospital. In addition to all these, there are routine teaching clinical rounds for the post graduate trainees and joint academic activities with different departments of the Institute (psychosomatic rounds with the departments of medicine, surgery, paediatrics, neurology etc.). In addition to this usual model, since last 5 years, another innovative model i.e. ***"hybrid model"*** is also being followed in PGIMER, Chandigarh in which the psychiatry resident doctor is stationed in the medical/surgical emergency department to evaluate the patients directly requiring psychiatric evaluation. By this process, it was seen that there was a substantial increase in the proportion of patients with medical illness for which psychiatric consultation was sought when compared to previously followed 'consultation model', in which the psychiatry resident doctor was called as and when required by the medicine/surgery resident doctors in the emergency department.[16] Therefore, such types of innovative models can help in enhancing our existing CL Psychiatry services in India.

State of CL Psychiatry in India and its current practice

Compared to the Western countries, where the referral rates for psychiatric services in general hospital set-ups are quite high i.e. around 10%,[12,17,18] the referral rates in India are much lower (0.15-3.6%).[8] In the period from 1950 to 2010, only 117 studies on psychiatric aspects of various physical illness were published in the Indian Journal of Psychiatry,[8] which itself demonstrates that the research in CL Psychiatry in India is rather poor in

quantity and perhaps in quality too. Major areas of research in CL Psychiatry in India have been delirium and deliberate self-harm. There is a paucity of research on CL Psychiatry models being practiced, audit of services being provided and training of psychiatrists regarding CL Psychiatry in India.

In our country, where most of the postgraduate and undergraduate training in psychiatry occurs in General Hospital Psychiatric Units (GHPUs), which are multi-specialty hospitals, it is expected that there should be a good scope of liaison with other medical and surgical specialties. However, the reality is otherwise and the problems faced in this type of training program are multifaceted. On one hand, there is lack of sufficient number of mental health professionals,[19] while on the other hand the available mental health professionals never/rarely teach psychiatry clinical skills to the undergraduates / postgraduates by having a clinical discussion in the CL psychiatry set-up, i.e. discussing mental health issues of a medically ill patient in the medical/surgical ward or discussing the same with the primary physician/surgeon. Hence, these are some of the few challenges which are needed to be met in order to develop CL Psychiatry services in India.

Challenges for CL Psychiatry in India

The scope of CL Psychiatry in India is very wide, ranging from and private clinics to outpatient/inpatient/emergency and ICU settings in GHPUs.

The challenges for CL Psychiatry at the different levels of health care are:

- **At PHC level/ private clinics/ outpatient medical/ surgical settings in general hospitals:** The physicians cling to the patients due to compulsions of medical practice (do not want to lose the patient to some other doctor) and also because of a mistaken belief/notion that referral to a psychiatrist means lack of ability to treat the patient or it diminishes one's reputation. Moreover, treating a psychosomatic patient is just like a "golden goose" who will come again and again to the physician because of the nature of his/her problems and is an easy source of income. [20]

- **At the inpatient/emergency and ICU settings in general hospitals:** Common psychiatric conditions (abnormal behaviour/delirium, suicidal attempt or threat, refusal to cooperate, conflicts between staff and patient, patient with a known psychiatric history or under psychiatric medications, etc.) are dealt by the treating physicians /surgeons in a casual manner, as management of such conditions has neither been emphasized during a resident's

undergraduate training period nor during his/her postgraduate training period in his/her specialty (other than psychiatry). Hence, it can be assumed that low referral rates in India could be because of any of the above-mentioned reasons/challenges.

Additionally, the lack of adequate recognition of CL Psychiatry in GHPUs in India could also be because of ignorance of psychiatric conditions on the part of our medical and surgical colleagues,[21,22] stigma regarding mental illness among treating doctors, and inadequate undergraduate exposure to psychiatry in medical schools.

Future of CL Psychiatry in India:

In order to face the above-mentioned challenges, we need to have an integrative approach. The approach should be to give equal importance to primary psychiatric disorders as well as to psychological aspects of physical illness and physical health of persons with psychiatric disorders. There is a need to follow 4 basic approaches to face the challenges related to CL Psychiatry.

1. **Enlightening ourselves (psychiatrists/psychiatry trainees)** - Refresher courses, focused CMEs and skill development workshops related to CL Psychiatry should be conducted by national, zonal and local psychiatric societies/associations periodically so as to educate the trainees about the basics of CL Psychiatry. Short-term observerships in centres with well-developed CL Psychiatry services and post-doctoral fellowship courses in CL Psychiatry/emergency psychiatry need to be started. The importance of general medicine/ surgery knowledge and clinical skills should also be emphasized in psychiatry training. Post graduate CL Psychiatry training should focus on some important aspects of CL Psychiatry as listed in Box 1.

Box 1: Important Aspects of Post Graduate CL Psychiatry training

- Prompt response, consultation, feedback
- Making a proper diagnosis
- Communicating with the primary treating physician and other treating team members
- Documentation of psychiatric history in simple terms and from medico-legal point of view
- Providing non-pharmacological treatment in a non-psychiatric set up
- Use of psychotropic medications in medically ill subjects
- Reviewing the cases from time to time
- Supervision and training
- Maintenance of records

2. **Enlightening medical-surgical colleagues about psychiatric issues in medically ill subjects –** It can be achieved through informal and formal discussions, discussing referrals after psychiatric consultation and holding joint psychosomatic teaching rounds with residents /students of both psychiatry and medicine/surgery. Collaborative research with medicine and surgical specialties can add on to these efforts benefitting both specialties. Studies have also shown that a simple telephonic conversation between CL psychiatrists and general practitioners (GP) after providing consultation has a salutary effect on reinforcing professional confidence and relationships. Brief training program (2 hours duration) regarding general psychiatric conditions likely to be encountered by the GPs in their practice can improve the GPs confidence with psychiatry recommendations. These are some of the very simple and easy to implement strategies.[23-25]

3. **Enlightening health educators, health administrators and health policy makers** - Holding informal and formal meetings with health educators/ administrators/ policy makers can be beneficial and memorandum/ action plans should be discussed so as to improve and build CL Psychiatry services in hospitals.

4. **Improving the existing CL Psychiatry services** - Enhancing the existing CL Psychiatry services so as to improve clinical services, training and research at the GHPUs can enhance the quality of care to a large extent. Considering the lack of human resources, consultation model at the start can be useful. But new innovative models like the "hybrid model" can also be practiced so as to enhance the existing CL Psychiatry services in India. [16]

Conclusions

CL Psychiatry is a vast and unchartered area of psychiatry. It has immense potential in training undergraduate and postgraduate psychiatry students regarding the importance of consultation and liaison with primary service providers for good patient management and patient welfare. It can help in improving the image of psychiatry among our fellow medical/surgical colleagues and can help in reducing stigma associated with mental illness too. However, we have to accept that the current CL Psychiatry services in India need to be enhanced and improved further.

References

I. Lipowski ZJ. Current trends in consultation-liaison psychiatry. Can J Psychiatry 1983; 28:329- 38.

2. Lipowski ZJ. Consultation-liaison psychiatry in general hospital. Compr Psychiatry 1971;12:461-5.
3. Smith GC. From consultation-liaison psychiatry to integrated care for multiple and complex needs. Aust N Z J Psychiatry 2009;43:1-12.
4. Lipsitt DR. Consultation-liaison psychiatry and psychosomatic medicine: the company they keep. Psychosom Med 2001;63:896-909.
5. Wise TN. Consultation liaison psychiatry and psychosomatics: Strange bedfellows. Psychother Psychosom 2000;69:181-3.
6. Ramchandani D, Wise TN. The changing content of psychosomatics: reflection of the growth of consultation-liaison psychiatry? Psychosomatics 2004;45:1-6.
7. Ali S, Ernst C, Pacheco M, Fricchione G. Consultation-liaison psychiatry: How far have we come? Curr Psychiatry Rep 2006; 8:215-22.
8. Grover S. State of Consultation-liaison psychiatry in India: Current status and vision for future. Indian J Psychiatry 2011; 53:202-13.
9. Parkar SR, Sawant NS. Liaison psychiatry and Indian research. Indian J Psychiatry 2010; 52:S386-S388.
10. Leentjens AFG, Rundell JR, Diefenbacher A, Kathol R, Guthrie E. Psychosomatic medicine and consultation-liaison psychiatry: scope of practice, processes, and competencies for psychiatrists or psychosomatic medicine specialists: AConsensus Statement of the European Association of Consultation-Liaison Psychiatry and the Academy of Psychosomatic Medicine. Psychosomatics 2011;52:19- 25.
11. Lipowski ZJ. Review of consultation psychiatry and psychosomatic medicine: ii. clinical aspects. Psychosom Med 1967;29:201.
12. Kontos N, Freudenreich O, Querques J. Ownership, responsibility and hospital care: lessons for the consultation psychiatrist. Gen Hosp Psychiatry 2008;30:257-62.
13. Leigh H. Common reasons for psychiatric consultation. In: Handbook of Consultation-Liaison Psychiatry. Boston: Springer 2007;37-49.
14. Carr VJ, Lewin TJ, Walton JM, Faehrmann C, Reid ALA. Consultation-liaison psychiatry in general practice. Aust NZ J Psychiatry 1997;31:85-94.
15. Strain J. Liaison Psychiatry. In: Rundell JR, Wise MG (eds): Textbook of Consultation-Liaison Psychiatry. Washington DC: American Psychiatric Press 1996;37-51.
16. Grover S, Sarkar S, Avasthi A, Malhotra S, Bhalla A, Varma SK. Consultation-liaison psychiatry services: Difference in the patient profile

while following different service models in the medical emergency. Indian J Psychiatry 2015; 57:361-6.

17 . Katon W, Von Korff M, Lin E, Bush T, Russo J, Lipscomb P, et al. A randomized trial of psychiatric consultation with distressed high utilizers. Gen Hosp Psychiatry 1992; 14:86-98.

18. Gillies D, Buykx P, Parker AG, Hetrick SE. Consultation liaison in primary care for people with mental disorders. Cochrane Database Syst Rev 2015;(9):CD007193.

19. Mohandas E. Roadmap to Indian psychiatry. Indian J Psychiatry 2009; 51:173-9.

20. Chen KX Evans R, Larkins S. Why are hospital doctors not referring to consultation-liaison psychiatry? - a systemic review. BMC Psychiatry 2016;16:390.

21. Desai ND, Chavda PD. Attitudes of undergraduate medical students toward mental illnesses and psychiatry. J Educ Health Promot 2018;7:50.

22. Aruna G, Mittal S, Yadiyal MB, Acharya C, Acharya S, Uppulari C. Perception, knowledge, and attitude toward mental disorders and psychiatry among medical undergraduates in Karnataka: Across-sectional study. Indian J Psychiatry 2016;58:70- 6.

23. Burian R, Franke M, Diefenbacher A. Crossing the bridge -A prospective comparative study of the effect of communication between a hospital based consultation-liaison service and primary care on general practitioners' concordance with consultation-liaison psychiatrists' recommendations. J Psychosom Res 2016;86:53-9.

24. Menchetti M, Tarricone I, Bortolotti B, Berardi D. Integration between general practice and mental health services in Italy: guidelines for consultation-liaison services implementation. Int J Integr Care [Internet] 2006; 6. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles / PMC1480371/(last accessed on May 7 , 2019).

25. Burkes M, Hanna L, Woollard J. Tips for GP trainees working in psychiatry. Br J Gen Pract 2011;61:148-9.

Chapter 2

C-L Psychiatry in Low Resource Settings: Meeting the Challenge

Rakesh K. Chadda, Ankit Gupta
Department of Psychiatry &
National Drug Dependence Treatment Centre
All India Institute of Medical Sciences
New Delhi 110029

Abstract

Consultation liaison (CL) psychiatry is a sub-specialty of psychiatry which functions at the interface of psychiatry and medicine, and includes clinical, teaching and research activities of psychiatrists in various non-psychiatric clinical settings in a hospital. CL psychiatry has established its utility by early identification and management of psychiatric morbidity and psychosocial problems in the medically ill, further evidenced by reduction of the medical costs by facilitating recovery and reducing duration of hospitalization in non-psychiatric medico-surgical settings. The discipline has though shown tremendous growth in the Western world, it is in infancy in most of the low- and middle-income countries, where mental health resources are not adequate. This chapter discusses the functioning of CL psychiatry in India from a perspective of low resource settings and challenges faced in establishment of formal CL psychiatry services. Authors propose models for development of CL psychiatry services in primary, secondary and tertiary care.

Introduction

Consultation liaison (CL) psychiatry services are very basic in India, and in most of the low and middle income (LAMI) countries. Mental health services were conventionally based in mental hospitals, but the general hospital psychiatric units (GHPUs) have gradually become an important mental health service provider in the last 5-6 decades along with the revolutions in psychopharmacology. CL psychiatry developed as an offshoot of the general hospital psychiatry and established itself as an important sub speciality of psychiatry with the recognition of psychiatric comorbidity and psychosocial issues in the medically and surgically ill in the general hospitals. The discipline,

though established as an important sub speciality in the Western world, remains at an infancy level in most of the low resource countries, and often functions with a consultation model.

This paper proposes a futuristic model of development of CL psychiatry services for low resource settings.

Scope of Consultation Liaison (CL) Psychiatry

CL psychiatry can be described as a subspecialty of psychiatry that incorporates clinical services, teaching and research at the borderland of psychiatry and medicine.[1] Service component includes consultation to non-psychiatrist physicians about the psychiatric problems in their patients. Teaching includes sensitising the colleagues from other disciplines about psychosocial aspects of medical care including diagnosing and managing the basic psychiatric problems in their patients, and referral when indicated. Research component includes assessment of psychosocial reactions to the primary physical illness in various medico-surgical disciplines, studying body-mind interaction, effectiveness of CL clinical and teaching activities, and emerging issues in psychosomatic medicine.

Psychiatric illnesses in non-psychiatric settings include mental and substance use disorders comorbid to the primary physical illnesses, psychiatric complications of medical illnesses, and psychiatric side effects of medications. In addition, the CL psychiatrist may also be requested to deal with non-cooperative or difficult to treat patients, and also use his/her skills at improving communication skills of trainees. Thus, the scope of CL psychiatrist is quite broad. It is important to mention here that the CL psychiatrist is not the person who would be treating all psychiatric problems in medico-surgical units. The CL psychiatrist is ideally a member of the treating team and his role is primarily to strengthen the skills of the parent clinician at diagnosing and managing the psychiatric or psychosocial problems in their patients. The patients needing a specific intervention or those who are difficult to manage, may be taken up for treatment by the CL psychiatrist.

Challenges in CL Psychiatry

Many of the patients attending various outpatient settings or admitted to different medico-surgical wards in general hospitals as well as in the primary care have high prevalence of mental disorders especially depression, anxiety and somatoform disorders. A large proportion of these patients remain undiagnosed and untreated further adding to the disease burden. Depression is estimated to be more than twice as common[2] and psychoactive substance use

as 2-3 times more common[3] in the patients attending various general hospital settings, compared to that in general population. Delirium is one of the commonest reasons for psychiatric referrals in GHPUs, occurring in about 20% of the patients admitted to various inpatient units.[4] Psychiatric comorbidity has also been identified a risk factor for exacerbation of the medical conditions. Depression is established both a risk factor as well as a poor prognostic indicator in coronary artery disease, myocardial infarction and stroke.[5,6] Thus psychiatric comorbidity as well as psychiatric complications of medical illnesses pose a big challenge to CL psychiatry.

It is important to mention here that somatic presentation of psychiatric disorders is very common, and it is important for the treating physician to differentiate between the physical symptoms indicating a medical illness and those indicative of a psychiatric disorder. The medical diagnosis is based on specific pattern of symptomatology, diagnostic signs and symptoms and physical investigations, whereas psychiatric diagnosis is primarily based on history and mental status examination. Pain in different body areas, disturbances in biological functions like appetite, sleep and libido, anxiety and loss of weight may occur both in psychiatric and medical illnesses, and it may be a challenge to make a correct diagnosis. Many patients admitted in various medical disciplines may also have a cluster of symptoms as described above, and the CL psychiatrist has an important role to play here.

A large number of studies from different parts of the world have investigated the prevalence and pattern of psychiatric morbidity in different kinds of non-psychiatric medical settings. A significant proportion of patients in primary care and hospital outpatients services have somatic symptoms not explained by medical disease. Depression often presents with multiple somatic symptoms, especially in the form of aches and pains in different body areas, lack of energy and disturbances in biological functions like sleep and appetite. Anxiety presents with symptoms of autonomic arousal and increased muscular tension. Patients with panic disorder often present with episodes of chest pain, dizziness and tingling, and frequently land up in medical emergency settings. The above findings were further substantiated in a multinational study conducted by the World Health Organization on patients in primary care settings in 14 countries,[7] which found a linear relationship between number of somatic symptoms and presence of depression and anxiety disorders.

In low resource settings, psychiatric morbidity in medical settings often remains undetected, untreated and may interfere in improvement of the primary medical condition. This also leads to increased service utilization for the primary illness and adds to the costs of treatment.[8] Depression, dementia, and

delirium are associated with higher utilization of medical care, both during hospitalisation (longer stay) as well as following discharge from the hospital. When delirium remains unrecognized and untreated, it may result in longer hospitalisation, and complications like cognitive deterioration or dementia. Untreated depression is associated with poor treatment compliance and rehospitalizations after discharge from the hospital. This further translates into a higher mortality and morbidity in cases of coronary disease, hyper-tension, diabetes, and stroke. Medically unexplained physical symptoms are another important challenge for the primary physician as well as the CL psychiatrist.

GHPU Vs CL Psychiatry in India

In the initial phase of development of the GHPUs in India, the psychiatry units started as a subunit in departments of internal medicine and were thus like the CL psychiatry units. Initially, these would attend to referrals but gradually separated as independent departments of psychiatry. Thus, in the initial phase, these were in some ways akin to the modern-day CL psychiatry units of the West. First GHPU in India started at Kolkata in 1933, as a part of the mental hygiene movement by Dr Girendra Shekhar Bose.[9] Initially, the services operated for 2 hours, twice a week. In 1938, Dr. KK Masani started psychiatric services at JJ Hospital, Mumbai,[10] which was followed by psychiatry outpatient services at the Prince of Wales Medical College Patna in 1939,[11] and KEM hospital, Mumbai in 1940.[12] In the post-Independence period, a number of psychiatry units started functioning from the departments of medicine in many medical colleges, which later developed as independent departments.

Formal CL psychiatry units are generally lacking at most of the places in India except a few, like at All India Institute of Medical Sciences (AIIMS), New Delhi, Postgraduate Institute of Medic al Education & Research (PGIMER), Chandigarh and National Institute of Mental Health & Neurosciences (NIMHANS), Bengaluru. Most places use consultation model. However, there are many informal examples of CL psychiatry in primary and secondary care, taken as service or programme activities under the National Mental Health Programme (NMHP)[13] of India. These include mental health outreach clinics in the primary health centres and training of medical officers under the District Mental Health Programme.[13] There has also been collaborative research with various other disciplines like internal medicine, neurology, cardiology, endocrinology, oncology and many others on mental health issues in the medically ill.[14]

Establishing CL Psychiatry Services in Low Resource Settings

A wide range of models of CL psychiatry have been used globally over the past few decades and have been classified based on focus of consultation, function and focus of work. Direct replication of existing successful models from the developed world into low resource public health systems is hindered by limited infrastructure and human resources.[15] However, useful components can be adapted to complement existing medical services at various levels for enhancing access to mental health. There are several practices which can be incorporated at tertiary, secondary and primary health care levels for building a pragmatic and efficient CL psychiatry model within the purview of public health system. This review aims at making recommendations in areas of medical education, inter-disciplinary collaboration, service provision and use of innovative technology to achieve this goal.

Mental health services in LAMI countries exist in mental hospitals, general hospitals, community outreach clinics, office-based practice, polyclinics and nursing homes. The services are generally not adequate and not well integrated with the general medical practice.[16] In this background, establishing formal CL psychiatry units is a big challenge. The services are to be developed within the constraint of limited available resources. There is a dire need for service provision considering substantial psychiatric morbidity among the patients attending various medico-surgical settings. There are several barriers unique to the prevailing health systems in LAMI countries which serve as challenges in building economical, effective and sustainable CL psychiatry models. These barriers may be systemic in nature in terms of lack of funding, inadequate manpower and lower priority for mental health in health services.[16] The knowledge and attitudes of clinicians towards psychological aspects of medical illness coupled with stigma of mental illness also form a barrier in enhancing collaboration and broadening scope of CL services.[17] The predominant model used is primarily need based specialist 'consultation' for acute psychiatric emergencies or severe psychiatric symptoms while the 'liaison' component remains largely neglected. In recent past, structured CL psychiatry services are being developed at few tertiary healthcare and academic institutions and more collaborative research is being conducted in this area in LAMI countries.

Establishment of the GHPUs was a major milestone in development of mental health services in India. GHPUs have revolutionised provision of psychiatric care across the country with advancement in patient care, teaching and research. The major advantages of the GHPUs over mental hospitals are reduction in stigma, mainstreaming of mental health issues and ease of accessibility for general population.[18] Over the past few decades, they have

emerged as the main source of mental health services and trainer for a large majority of the mental health professionals in the country.

Here, we propose how to go on with development of CL psychiatry services in tertiary, secondary and primary care.

CL Psychiatry in Tertiary Care: GHPUs are active in teaching and training in psychiatry at both undergraduate and postgraduate levels. These units, functioning in close proximity to various medical specialities, offer great scope for integration with other disciplines of medicine and surgery. CL psychiatry unit can be developed as a valuable service in this background. A beginning can be made by offering psychiatric consultations in medical wards and designating a dedicated CL psychiatry team. This team should consist of psychiatry residents on rotation under supervision of consultants, providing prompt response and steady input. Early identification of psychiatric symptoms and psychosocial factors among medical patients requires a high index of suspicion. To improve screening and referral, psychiatrists have a duty to raise awareness amongst the non-psychiatric medical professionals about co-existing psychosocial and psychiatric problems in the medically ill. This can be facilitated by encouraging inter-departmental clinical meetings and case discussions with participation from both psychiatry as well as other disciplines. Continuing medical education (CME) activities focusing on recent developments in psychological aspects of medicine is another platform for exchange of knowledge between mental health and other medical professionals. Such a model has already been used at certain places in India and has applicability to mental hospitals also. A psychosomatic clinical meeting/round can be introduced both for clinical utility and academic interest. This weekly inter-departmental clinical meeting should be centred around discussion of a patient with psychosocial issues admitted in a medico surgical unit. The clinical rounds can be scheduled on a rotation basis in conjunction with medicine and allied disciplines, surgical disciplines, paediatrics and emergency services respectively.

CL Psychiatry in Secondary Care: Secondary care is focussed primarily on service provision with lesser resources for academic activities and research. Establishment of resource intensive formal CL psychiatry units is not feasible. Unlike tertiary care, linkages between psychiatry and other clinical disciplines are not very well established at secondary care level. A closer relationship can be fostered by encouraging referrals and offering consultation services, and raising awareness amongst the non-psychiatric medical professionals about co existing psychosocial and psychiatric problems in the medically ill. Psychiatrists should take lead in organising inter-departmental clinical meetings and organising CME activities for training physicians in managing common mental disorders, screening and

referral for major psychiatric disorders.

CL Psychiatry in Primary Care: There is an immense scope of integration of mental health services with primary healthcare which is limited by lack of trained auxiliary staff and overreliance on specialist input.[16] This is contrary to the approaches in developed countries where CL psychiatry services are managed by multidisciplinary teams with well-trained nursing and paramedical staff. This problem is further compounded by a low psychiatrist: population ratio in most of the LAMI countries. A recent survey of 72 community mental healthcare programs across 12 Indian states has also identified intensive specialist involvement particularly in the community outreach and collaborative care models as a limiting factor for their scalability.[19] Therefore, the psychiatrists need to take a leadership role in establishing an indigenous model for serving a large population with limited strength of mental health professionals. This is an opportunity for psychiatrists to diversify their role from being a medical expert and researcher to be an innovator, team manager, mental health advocate and trainer of primary care physicians and paramedical professionals. Integration of mental health with primary care is a major public health issue and requires initiatives at policy level. Primary care plays a vital role as first contact for treatment seekers in general population. Primary care doctors and health professionals need to be equipped with necessary skills for managing common mental disorders and substance use disorders (SUD). There is a serious lack of access to mental health care at this level with a treatment gap of around 75% in many LAMI countries. [20]

In the recent past, the WHO has initiated its Mental Health Gap Action Programme (mhGAP) and introduced the Intervention Guide (mhGAP-IG). [20] mhGAP-IG is being used by governments, non-governmental organisations and academic institutes to impart training in primary care and scale up mental health services in over 90 countries.[21] Despite its widespread use, there is limited literature available on the impact of implementation of these programs in the diverse cultural contexts across LAMI countries.[21] In Indian context, District Mental Health Program (DMHP) has been set up to decentralise mental health services and provide quality mental health care at community level.[13] There are certain initiatives under DMHP which have potential to extend the reach of CL psychiatry to grassroot levels. Regular training programmes for empowering primary care physicians and health workers are also organised by academic institutions.

Psychiatrist led peripheral clinics have also been set up in a few primary

health centres by academic institutes to treat patients as well as to support the doctors and allied staff. More tertiary care units can take initiatives in collaboration with public health or community medicine specialists to offer weekly extension clinics. Recently, new technical innovations have facilitated growth of telepsychiatry model for collaboration with primary care transcending long distances through video conferencing. This model has been used by some government and non-government organisations for training in mental health and clinical purposes.[22] The scope of these programs can be increased to include psychological aspects of physical illness and CL services.

Assessment in CL Settings

Psychiatric assessment in CL Psychiatry settings differs from routine psychiatric clinics in terms of the focus, the referring physicians' query, time constraints, confidentiality and interference in a busy medical ward. A CL psychiatrist needs to be meticulous and well informed about the primary medical condition and its treatment including psychiatric adverse effects. Important consideration should be given to distinguish anxiety and depressive disorders from normal emotional responses to physical illness and its treatment.

Table-I. Common Medical conditions causing psychiatric disorders directly

Depression	Endocrine disorders (e.g. Cushing's, Addison's, hypothyroidism, diabetes etc.), neurological disorders (e.g. stroke, Parkinson's, multiple sclerosis, Alzheimer's, etc.), coronary heart disease, malignancies, nutritional deficiencies, infections (e.g. tuberculosis, encephalitis, HIV, hepatitis), SLE, adverse drug reactions.
Anxiety	Cardiopulmonary disorders (e.g. Mitral Valve Prolapse, cardiac arrhythmias, asthma, etc.), endocrine disorders (e.g. hyperthyroidism, pheochromocytoma, hypoglycaemia, etc.), hyperventilation syndrome, neurological disorders, drug intoxication and withdrawal.
Psychosis	Autoimmune disorders (e.g. SLE, NMDA receptor encephalitis), cerebra-vascular disorders (e.g. stroke, subdural hematoma, space-occupying lesions), Wilson's disease, vitamin B12 deficiency, infections (e.g. neurosyphilis, toxoplasmosis, HIV), degenerative/demyelinating disorders (e.g. Lewy body dementia, Parkinson's disease, Huntington's disease, etc.), seizure disorder, adverse drug reactions.
Delirium	Infections (pneumonia, urinary tract infection, intraabdominal infection, meningitis or encephalitis, etc.), cardiopulmonary (myocardial infarction, congestive heart failure, shock, hypoxia), electrolyte abnormalities, acute hepatic failure (hepatic encephalopathy), acute renal failure (uremic encephalopathy), hypoglycemia or hyperglycemia, thiamine deficiency (e.g. Wernicke encephalopathy), hypothyroidism or hyperthyroidism, cerebrovascular accident, seizure disorder, major surgical procedures, polypharmacy.

They need to be aware that medical conditions and their treatment may cause symptoms such as fatigue and loss of appetite, which are also important symptoms of psychiatric disorders. One of the aims of consultation should be to explore the patient's understanding and fears related to the medical condition and its treatment. The CL psychiatry team should work in close coordination with other medical specialties to formulate a structured management plan which should be communicated effectively and explicitly. Psychoeducation aimed at the patient and family members is also required to help patients make accurate attributions and conclusions concerning their psychological changes. Table 1 summarises common medical conditions leading to psychiatric symptoms.

Some Suggested Innovations

Despite several initiatives, the practice of CL psychiatry in India remains restricted largely to academic institutions, and sustainable models for wider applicability are still missing. At this early stage, dissemination of information and awareness activities among medical professionals is of paramount importance. Psychiatrists should take initiatives to strengthen collaborations with other medical specialists irrespective of settings or level of practice. Office based practitioners can begin coordination by sending response letters to the referring physicians detailing patients' assessment and management plan to keep them informed. Psychiatrists associated with multi-speciality clinics, nursing home and hospitals can arrange informal discussions with medical colleagues such as organising coffee table meetings for case discussion. District hospitals can similarly have clinical group meetings and coffee table meetings for consultants from various departments to bring this neglected area into attention. Another excellent opportunity for collaboration is through developing linkages with professional societies and associations of various medical and surgical specialities. These organisations can be instrumental in sensitising their members about the need for mental health inputs in their respective disciplines.

The future growth of CL psychiatry subspecialty requires an increased focus on training postgraduate residents in this subspecialty. There are certain skills pertinent to this area which need to be developed during psychiatric training. A systematic approach to diagnosing a mental condition in this patient group requires thorough knowledge of psychiatric manifestations of systemic illnesses and associated psychosocial issues for an accurate differential diagnosis. Proper documentation of psychiatric history and a clear concise management plan in medical notes is essential from medicolegal point of view as well as for ease of communication with non-mental health

professionals. Periodic review of cases during inpatient stay and regular follow up after discharge is essential to assess treatment response and ensure patient compliance. Psychiatric training should also include knowledge about judicious use of psychotropic medications in medically ill subjects. Mental health professionals need to be trained to deliver non-pharmacological treatment in a non-psychiatric set up. These goals can be achieved by increasing exposure of psychiatry residents to medical and surgical units preferably by 3-4 months of training exclusively focusing on the CL psychiatry. Besides the residents undergoing training in psychiatry, trainee doctors undergoing residency in other medical and surgical specialties can also be posted in psychiatry for varying periods of 1-2 months. This will help raise awareness about psychosocial issues among physicians and develop basic skills to screen and manage common mental disorders.

Sub Specialisation in CL Psychiatry

An important step forward to develop this area will be to train a cadre of dedicated psychiatrists who can build and lead CL psychiatry teams in future. Fellowship or doctoral level programmes in CL psychiatry can be started to provide higher training to interested psychiatrists and stimulate academic interest in this field. It would help in enhancing the available human resources critical for providing good quality services. These trained CL psychiatrists will be instrumental in preparing assessment and treatment protocols, setting standards of care, imparting skills and training, and promoting research in CL psychiatry. One of the major leadership roles for CL psychiatrists will be to design orientation and training programs for other mental health professionals like nurses, clinical psychologists and social workers. This can go a long way in developing a multidisciplinary team with capacity to handle both pharmacological and psychosocial aspects of mental health care of medically ill subjects.

CL Psychiatry at AIIMS

Department of Psychiatry and National Drug Dependence Treatment Centre (NDDTC) at All India Institute of Medical Sciences (AIIMS), New Delhi has a dedicated CL psychiatry team consisting of two faculty members, one senior resident and two academic junior residents. This team works round the clock to provide mental health services to patients admitted to various medical or surgical units of this 2400+ bedded tertiary care centre. Clinical psychologist input is also availed in selected cases to provide psychological interventions in medical wards. A separate CL addiction psychiatry service has also been started recently with a DM addiction psychiatry senior resident under supervision of faculty from NDDTC. A detailed structured record of all

the referrals with results of assessment and management plan is maintained by the department and audited at regular intervals. Among outpatient services, the department runs a weekly psychosomatic clinic in psychiatry outpatient services, which is focused on management of patients at the interface of medicine and psychiatry. The Department also conducts a weekly neuropsychiatry outpatient clinic in collaboration with neurology department at the Neuro Centre of the institute, which was started in 1985. As part of primary care outreach, the department also has a daily community clinic at the institute's Comprehensive Rural Health Services Project at Ballabhgarh in Faridabad district and weekly clinic at Jhajhar campus. In terms of research, substantial collaborative work in the form of postgraduate thesis and funded projects have been actively undertaken with various clinical disciplines like cardiology, endocrinology, nephrology, neurology, pulmonary medicine, internal medicine etc. leading to several publications.

From training perspective, psychiatry residents undergo a mandatory 2 months training in neurology at the AIIMS neuroscience centre which is useful to gain essential skills for management of complex neuropsychiatric presentations. Post graduate trainees from other disciplines such as Internal Medicine, Paediatrics, Neurology, Emergency Medicine, Geriatric Medicine and Palliative Care are also posted in psychiatry and gain valuable skills in assessment and management of commonly encountered mental health problems.

Conclusion

Integration of mental health with other medical disciplines is essential for a holistic and comprehensive model of healthcare. Setting up of formal CL Units may not be feasible in low resource settings due to limited resources. However, it is possible to start informal CL psychiatry services with the existing resources using innovative approaches. Psychiatrists need to take a leadership role in achieving this goal.

References

1. Lipowski ZJ. Consultation-liaison psychiatry: the first half century. Gen Hosp Psychiatry 1986; 8:305-15.
2. Walker J, Burke K, Wanat M, Fisher R, Fielding J, Mulick A et al. The prevalence of depression in general hospital inpatients: a systematic review and meta-analysis of interview-based studies. Psychol Med 2018; 48:2285- 98.
3. Brown RL, Leonard T, Saunders LA, Papasouliotis O. The prevalence and

detection of substance use disorders among inpatients ages 18 to 49: an opportunity for prevention. Prev Med 1998; 27:101-10.

4. Ryan DJ, O'Regan NA, Caoimh RO, Clare J, O'Connor M, Leonard M et al. Delirium in an adult acute hospital population: predictors, prevalence and detection. BMJ Open 2013;3:e00l 772.
5. Carney RM, Freedland KE. Depression and coronary heart disease. Nat Rev Cardiology 2017;14:262-263.
6. Bartoli F, Di Brita C, Crocamo C, Clerici M, Carra G Early post-stroke depression and mortality: meta-analysis and meta-regression. Front psychiatry 2018;9:530.
7. -Ostiin TB, Sartorius N. Mental Illness in General Health Care: An International Study. Chichester (UK): John Wiley & Sons, 1995.
8. Jansen L, van Schijndel M, van Waarde J, van Busschbach J. Health-economic outcomes in hospital patients with medical-psychiatric comorbidity: A systematic review and meta-analysis. PloS One 2018; 13:e0194029.
9. Saldanha D, Bhattacharya L, Daw D, Chaudari B. Origin and development of general hospital psychiatry. Med J DY Patil Univ 2013; 6:359-65.
10. Dr. Kaikhusru RustomMastani (1905-). Indian J Psychiatry 2010; 52:161-2.
11. Choudary S. Lt. Colonel Jal E. Dhunjibhoy (1911-1980). Indian J Psychiatry 2010;52:141-2.
12. Apte JS. Dr NS Vahia (1916-2007). Indian J Psychiatry 2010;52:205-208.
13. National Mental Health Programme. Government of India. Available at http://dghs.gov.in/content/l 350_3_National Mental Health Programme. aspx (last accessed on Mar 7, 2019)
14. Grover S. State of consultation-liaison psychiatry in India: Current status and vision for future. Indian J Psychiatry 2011;53:202-13.
15. Menon V, Sarkar S, Thomas S. Establishing a psychosomatic clinic in a low resource setting: Process, challenges, and opportunities. J Neurosci Rural Pract 2016;7:171-5.
16. Bauer AM, Fielke K, Brayley J, Araya M, Alem A, Frankel BL et al. Tackling the global mental health challenge: a psychosomatic medicine/ consultation-liaison psychiatry perspective. Psychosomatics 2010;51:185-93.

17. Chadda RK, Deb KS, Prakash S, Sood M. Need assessment of consultation liaison psychiatry amongst the clinical faculty. Ann Natl Acad Med Sci (India) 2017;53:97-103.

18. Chadda RK, Sood M. General hospital psychiatry in India: History, scope, and future. Indian J Psychiatry 2018;60:S258-63.

19. Vcm Ginneken N, Maheedhariah MS, Ghani S, Ramakrishna J, Raja A, Patel V. Human resources and models of mental healthcare integration into primary and community care in India: Case studies of 72 programmes. PloS One 2017;12:e0l 78954.

20. World Health Organization (2017). WHO Mental Health Gap Action Programme (mhGAP). Available athttp://www.who.int /mental_health/ mhgap /en/ (last accessed on Mar 7, 2019)

21. Keynejad RC, Dua T, Barbui C, Thornicroft G. WHO Mental Health Gap Action Programme (mhGAP) Intervention Guide: a systematic review of evidence from low and middle-income countries. Evid Based Ment Health 2018;21:30-4.

22. Naskar S, Victor R, Das H, Nath K. Telepsychiatry in India- Where do we stand? A comparative review between global and Indian telepsychiatry programs. Indian J Psychol Med 2017;39:223-42.

Chapter3

Communication with the Non-psychiatrist clinician: Evolving a common language

Pratap Sharan, Prashant Gupta
Department of Psychiatry, All India Institute of Medical Sciences, New Delhi-Il0029

Abstract

More often than not, the first point of contact for people having psychiatric disorders is a general medical practitioner or non-psychiatrist specialist. A substantial number of people having mental disorders require medical/ surgical management because of co-morbidities and adverse effects of drugs. In order to establish an adequate referral chain for such patients and to provide integrative care, effective communication needs to take place. But, a significant communication gap is often observed between psychiatrists and other health professionals owing to the stigma surrounding psychiatry and patients having mental disorder, the perceived lack of seriousness as a medical discipline towards psychiatry among health professionals and the meagre number of hours dedicated for exposure to psychiatric training. In this chapter, we have tried to explore the existing barriers and ways in which a common language (written or spoken) can be, or is being developed for bridging this communication gap between psychiatrists and non-psychiatrist clinicians. Efforts focused at improving under-graduate and post-graduate training opportunities in psychiatry, standardizing algorithmic approaches to diagnosis and treatment, and evolving and implementing C-L psychiatry and subspecialties which connect psychiatry with other disciplines may go a long way in overcoming the communication barriers.

Introduction

Psychiatric morbidities are commonly encountered in general medical practice. Various studies have estimated the prevalence of common mental disorders among patients presenting to primary health care units ranging from 10 to 50%, with an average of about a quarter to a third suffering from such conditions.[1,2] Widely varying but substantially high prevalence of psychiatric disorders has also been reported among patients hospitalized for medical or

surgical conditions, to the extent that rates as high as 79% have been reported in some studies.[3] Due to this, the first point of contact for people having psychiatric disorders is often a general medical practitioner or specialists from other medical disciplines. Moreover, a substantial number of patients attending psychiatric clinics require multi-disciplinary management, because a number of psychiatric disorders and medicines used for their treatment predispose to medical conditions. For example, long standing depressive and psychotic illnesses predispose to metabolic syndrome and so does the prolonged use of second generation antipsychotics.[4] In order to establish an adequate referral chain for such patients and to provide them integrative care, effective communication needs to take place between the psychiatrists and other clinicians.

In this chapter, we have tried to highlight the existing communication gap in healthcare settings, especially when it comes to collaboration between psychiatrists and non-psychiatrist clinicians. Moreover, we have explored the ways in which a common language can be, or is being developed to bridge this communication gap. For the purpose of this chapter, we have strictly limited ourselves to spoken and written language. Though we would like to acknowledge that effective communication is dependent upon several factors including but not limited to ethno-cultural-linguistic similarities, organizational culture, cognitive, affective and behavioural communication competence, and relational qualities such as trust, commitment and satisfaction.[5]

The communication gap

According to the Oxford dictionary, *communication* is the imparting or exchanging of information by speaking, writing, or using some other medium. Effective communication is an essential prerequisite for developing strong and effective relationships, and improving work performance.[6] Hospitals are complex interdependent systems with multiple interdependent sub-systems, among which coordination needs to be achieved through networking and negotiations.[7,8] Communication failures among these systems affect the quality of patient care and may lead to inadvertent patient harm.[9] In the present era when medical disciplines are getting progressively circumscribed with the development of specializations, sub-specializations and super-specializations, clinicians tend to lose touch with other medical disciplines. The diverse cultures, norms, and language of each medical profession might make the process of interdisciplinary communication and collaboration resemble the bringing together of inhabitants from foreign lands.[10] The barriers to communication are to the extent that studies have even shown inter-disciplinary hostilities being expressed via written medical records.[8]

Communication between mental health professionals and specialists from other disciplines is, intuitively, more vulnerable to such failures. The stigma surrounding psychiatry and psychiatric patients, the perceived lack of seriousness as a medical discipline towards psychiatry among health professionals and the meagre number of hours dedicated for exposure to psychiatry or psychiatric training during medical training, all contribute to the widening communication gap between psychiatrists and non-psychiatrist clinicians.[11,12]

Language barrier

Language is defined by the Oxford dictionary as the method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.[13] For an effective communication to take place there needs to be a language medium which is understood by both the *transmitter* and the *receiver*. The language of medicine is a specialized language which enables effective communication between health professionals from different national, cultural and linguistic backgrounds, different levels of learning and varying specializations. Through the specialized terminology, use of abbreviations and symbols may generate a dense code which renders it cryptic and incomprehensible to the uninitiated ones. [8,14] With advancement in medicine and branching out of more and more sub-specialties, each branch has developed its own linguistic jargon which may not be easily understandable by specialists from other branches. This is one of the major factors responsible for the above-mentioned communication gap in hospitals.

The language barrier among medical professionals from different specialties may be broadly divided into the following types:

1. **Unfamiliarity with terms used in other specialty:** Non-psychiatric clinicians may be unfamiliar with psychiatric terminology (names of conditions, drugs, procedures, etc.), or psychiatrists not be familiar with terms used in other medical disciplines. For example, a psychiatrist may be unaware of the Blalock-Taussig procedure (a surgery done for Tetralogy of Fallot), while a cardiologist may be unaware of the drug vilazodone.

2. **Abbreviations:** Some abbreviations which are commonly used in clinical communication in one medical specialty might be difficult to comprehend for the specialists from the other clinical disciplines. For example, a psychiatrist may not be able to understand what does "PCI" stands for even if they may have had the exposure to per-cutaneous coronary interventions during their medical training. Similarly, the

abbreviations ATPD (acute transient psychotic disorder) and MDD (major depressive disorder) may be lost upon a cardiologist.

3. **Similar terms for different conditions:** Same terms or abbreviations may be used to describe different things among different disciplines. While "BT" in a general medical ward means blood transfusion, it means behavioural therapy in a psychiatry ward. Similarly, a neurologist may call fronto-temporal dementia as "FTD", while it may stand for formal thought disorder for a psychiatrist.
4. **Different terms for same conditions:** Different clinical disciplines may use different terms to describe the same thing. For example, the same clinical specialty may be described as 'consultation-liaison' by a psychiatrist and as 'psychosomatics' by an internist.

A common language

The need for a common language of psychiatry which is free of jargon and is understood by non-psychiatric health professionals cannot be stated enough.[15] Lack of understanding hampers learning, referrals and collaborative care and research.[15] This has a direct influence on the mental healthcare gap on a macro level, and patient care on an individual level. Thus, development of a standardized common language and its proper dissemination and acceptance among the entire healthcare fraternity is essential. Below we explore some of the methods which may help in overcoming the language barrier and their potential short-comings.

Standard diagnostic manuals

Diagnostic manuals, such as International Classification of Diseases (ICD) and Diagnostic and Statistical Manual (DSM) of mental disorders, provide standardization of the diagnostic entities and clinical descriptions, which are readily available and accessible (either paid or free) for all. These manuals provide a common language framework for psychiatric conditions which can be accessed by all clinicians. But a major drawback is that the use of these manuals is cumbersome and requires time for coding of diagnoses.[2] Clinicians, especially non-psychiatrists, might be more comfortable in using diagnoses of common parlance without psychiatric jargon rather than the coded ones.[2] Moreover, at least some amount of training is necessary for the use of these manuals which is not readily available for all clinicians. Lack of motivation, lack of sensitization to mental health problems and stigma may also hamper the use of psychiatric diagnoses. Further, the diagnostic categories and criteria are revised every few years in these manuals which may hamper their use.[16] as compared to the diagnostic terms such as hysteria, neurosis, etc. which have been prevalent over decades.

To overcome these short-comings, both ICD-10 and DSM-5 have a primary health care (PHC) version which focuses on only a limited number of conditions based on their public health importance, availability of effective management strategies, consensus for their diagnosis and management among psychiatrists and primary care physicians, and cross-cultural applicability in different PHC settings.[2] But, acceptance by and dissemination to health professionals of this PHC version remains a big problem.

Diagnostic and treatment algorithms for psychiatric disorders in primary care

Algorithm-based identification and treatment of medical conditions has been shown to be effective in PHC settings. One such algorithmic approach is followed by the World Health Organization Mental Health Gap (WHO mhGap) Intervention Guide, [17] which has shown promising results in primary care, even when used by health workers. But, dissemination and acceptance among health professionals remains a challenge.

Psychiatry training

Psychiatry is one of the most neglected medical disciplines in undergraduate training. Number of hours dedicated to psychiatry training is meagre.[18] Moreover, there is little if any provision for assessment of students on psychiatric competencies.[18] Further, only a few institutes offer rotating psychiatry clerkship in post-graduation courses in other medical disciplines. As a result, a substantial number of doctors are unaware about psychiatric diagnoses and treatment,[19] and hence the language of psychiatry is deemed alien. Improving the training of psychiatry in medical under-graduate and post-graduate studies may help in sensitizing clinicians to mental health problems, dissemination of the knowledge of psychiatry, reducing stigma towards psychiatry and patients having mental health problems, and acceptance of psychiatry as a potential career option.[12] This ultimately culminates in dissemination and acceptance of the language of psychiatry, increased fluency among clinicians, and bridging the communication gap between psychiatrists and non-psychiatric health professionals.

Currently, the All India Institute of Medical Sciences (AIIMS), New Delhi is pioneering the advancement of training in psychiatry. The institute offers necessary psychiatry rotations of 65 days as a part of the MBBS curriculum, and 15-30 days as a part of post-graduate curricula of several specialties including Internal Medicine, Geriatric Medicine, Community Medicine, Emergency Medicine, Palliative Medicine and Neurology.[20] Such mandatory postings are also a part of BSc Nursing curriculum. Moreover, a specialized MSc Psychiatry Nursing course is also available.[20] The department of psychiatry at AIIMS also takes active part in inter-disciplinary Clinical Combined Rounds (CCR).

The recently proposed revisions in MBBS teaching programme by the Medical Council of India provide for a greater number of hours than earlier for psychiatric training and highlight the necessary clinical competencies in which a student must be adept.[21] The revisions also state the methods of assessment for these competencies.[21] Furthermore, provisions have been made for assessments to be held by psychiatrists, which at many places are being conducted by other clinicians, and the topics, which need collaborative teaching by more than one specialty, including psychiatry, have been explicitly stated.[21]

Consultation-liaison psychiatry

Consultation-liaison (C-L) psychiatry, also known as psychosomatic medicine, is a subspecialty of clinical psychiatry that encompasses clinical, teaching and research activities of psychiatrists and allied mental health professionals in the non-psychiatric divisions of a general hospital.[22] It can be credited with bringing psychiatry out of mental asylums to the general hospitals and reducing the stigma against mental illnesses among medical professionals.[22] Different hospital settings may employ different models of C-L psychiatry which provide varying degrees of integration from an external consultant for psychiatric consultation for mental health problems of general hospital patients to multidisciplinary teams having different health professionals including psychiatrists and physicians required to work in a highly collaborative fashion.[22] Through such integration, C-L psychiatry provides a bridge between psychiatrists and non-psychiatrist clinicians, providing them a rare opportunity to share knowledge, undertake collaborative teaching and research, and provide comprehensive and well-rounded patient care.

Specialized training in C-L psychiatry has been going on in several parts of the world, predominantly the developed countries, for some years now.[22] But more recently, NIMHANS, Bengaluru has also started offering specialized C-L psychiatry fellowships to psychiatry graduates. Understandably, this will reduce the communication gap and provide psychiatric and non-psychiatric professionals more adeptness in each other's language.

Sub-specialties

With the advent of specializations, some sub-specialties which border between psychiatry and other disciplines have also emerged. The most prominent example in this list is that of neuropsychiatry. Behavioural neurology and neuropsychiatry have been formally approved as sub-specialties by several authorities across the world,[23] and currently specialized training courses and dedicated clinics have been ongoing in some institutes, including the AIIMS, New Delhi. Such sub-specialties entail collaborative training of clinicians and

promote joint clinical care and research ventures. They create a pool of experts who are well-versed with the relatively untouched grey areas between disciplines. Consequently, they bridge the existing communication gap between specialists. Other such upcoming ventures include psycho-cardiology[24] and psycho-dermatology.[25] But, such specializations run the risk of further narrowing down the scope of clinical practice by losing touch with other disciplines. Collaboration is the basic essence of such areas of expertise and losing sight of this virtue may be potentially detrimental for integrative research and healthcare.

Conclusions

The need for effective communication between psychiatrists and non-psychiatrist clinicians cannot be overstated. It is the basic pre-requisite for achieving holistic healthcare for patients having mental health problems and for conducting collaborative research for advancement of medical science. Improved undergraduate and postgraduate training opportunities in psychiatry and standardized algorithmic approaches to diagnosis and treatment in C-L psychiatry and subspecialties which bridge psychiatry with other disciplines may go a long way in bridging the existing communication gap and evolving a common language. Efforts need to be focused on adaptation of these measures to individual settings and their effective implementation.

References

1. Ustun T, Sartorius N. Mental Illness in General Health Care: An International Study. (Ustun T, Sartorius N, eds.). Chichester, New York, Brisbane, Toronto, Singapore: John Wiley & Sons; 1995.
2. Jacob KS, Kallivayalil RA, Mallik AK, et al. Diagnostic and Statistical Manual-5: Position paper of the Indian Psychiatric Society. Indian J Psychiatry. 2013;55:12-30.
3. Yanzon de la Torre A, Oliva N, Echevarrieta PL, et al. Major depression in hospitalized Argentine general medical patients: Prevalence and risk factors. J Affect Disord. 2016;197:36-42.
4. Vancampfort D, Stubbs B, Mitchell AJ, et al. Risk of metabolic syndrome and its components in people with schizophrenia and related psychotic disorders, bipolar disorder and major depressive disorder: a systematic review and meta-analysis. World Psychiatry. 2015;14:339-347.
5. Griffith DA. The role of communication competencies in international business relationship development. J World Bus. 2002;37:256-265.

6. Nevin JR. Relationship marketing and distribution channels: exploring fundamental issues. J Acad Mark Sci 1995; 23:327-334.
7. Van Cott H. Human Error: Their Causes and Reduction. In: Bogner M, ed. Human Error in Medicine. CRC Press; 2018.
8. Hewett DG, Watson BM, Gallois C, Ward M, Leggett BA. Communication in medical records. J Lang Soc Psychol 2009;28:119-138.
9. Sutcliffe KM, Lewton E, Rosenthal MM. Communication failures: an insidious contributor to medical mishaps. Acad Med 2004;79:186-194.
10. Bronstein LR. A model for interdisciplinary collabo ration. Soc Work 2003;48:297-306.
11. Chawla JM, Balhara YPS, Sagar R, Shivaprakash. Undergraduate medical students' attitude toward psychiatry: a cross-sectional study. Indian J Psychiatry 2012;54:37-40.
12. Lyons Z, Janca A. Impact of a psychiatry clerkship on stigma, attitudes towards psychiatry, and psychiatry as a career choice. BMC Med Educ. 2015;15:34.
13. Stevenson A. Oxford Dictionary of English. Oxford University Press; 2011.
14. Hobbs P. The role of progress notes in the professional socialization of medical residents. J Pragmatics 2004; 36:1579-1607.
15. Lipowski ZJ, Zbigniew J. Psychosomatic Medicine and Liaison Psychiatry:Selected Papers. Plenum Medical Book Co; 1985.
16. Kendall PC, Drabick DAG. Problems for the book of problems? Diagnosing mental health disorders among youth. Clin Psychol. 2010; 17:265-271.
17. World Health Organization. MhGAP Intervention Guide Version 2.0 for Mental, Neurological and Substance Use Disorders in Non-Specialized Health Settings. Geneva; 2017.
18. Kishor M, Isaac M, Ashok M V, Pandit L V, Sathyanarayana Rao TS. Undergraduate psychiatry training in India; past, present, and future looking for solutions within constraints!! Indian J Psychiatry. 2016; 58:119-120.
19. Chaudhary RK, Mishra BP. Knowledge and practices of general practitioners regarding psychiatric problems. Ind Psychiatry J. 2009; 18:22-26.
20. AIIMS New Delhi. Department of Psychiatry, All India Institute of

Medical Sciences, New Delhi. Available at www.aiims.edu/en/psychiatry, educations.html (accessed on 15 March 2020)

21. Medical Council of India. Competency Based Undergraduate Curriculum for the Indian Medical Graduate. New Delhi; 2018.
22. Grover S. State of Consultation-Liaison Psychiatry in India: Current status and vision for future. Indian J Psychiatry. 2011;53:202-213.
23. Silver JM. Behavioral neurology and neuropsychiatry is a subspecialty. J Neuropsychiatry Clin Neurosci 2006; 18:146-148.
24. Herrmann-Lingen C. Steps towards integrated psychosomatic medicine-The example of psychocardiology. J Psychosom Res 2011; 70:111-115.
25. Frarn;a K, Castillo DE, Roccia MG, Lotti T, Wollina U, Fioranelli M. Psychoneurocutaneous medicine: past, present and future. Wiener Medizinische Wochenschrift. 2017; 167:31-36.

Chapter4

Assessment and Management of Agitated Patient inGeneral Hospital Settings

Sandeep Grover, Himanshu Singla
Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh-160012

Abstract:

Agitation is an emergency which is associated with greater chances of threat to safety of the patient as well as health care professionals. Agitation has been found to be associated with greater risk of adverse outcomes in terms of injury, use of more medications, cost of treatment, and severity of illness. Timely and adequate management of agitation can reduce the chances of such outcomes. Initial assessment is *important to find out the possible etiology, and determine the severity of agitation. In most of the scenarios, a medical cause is suspected until proved otherwise. Various scales are helpful in assessment. The choice of scales* is *based on the appropriateness of the scale in assessing in the particular situation. The staff should be trained to manage such patients. While managing the patient, non-pharmacological methods are very important and should be tried in the beginning along with pharmacological methods, when required.*

Introduction

Agitation is a frequent phenomenon among patients suffering from psychiatric illnesses, seen across different treatment settings, i.e., emergency, inpatient and outpatient services.[1] Besides psychiatric settings, agitation is also encountered in medical and surgical wards, community setting and prison.[2,3] Agitation in any form requires immediate attention, as this can have negative consequences for the person experiencing it along with others including family members and hospital staff.[4,5] Agitation has also been reported to be associated with higher treatment costs, longer hospital stay, higher number of hospitalizations, and more frequent use of restrains and medications.[6-8] It has also been seen that psychomotor agitation can also be a predictor of suicidality.[9,10]

Although the term 'agitation' is used quite frequently, there is lack of consensus on the definition of agitation. According to the Cambridge Dictionary, agitation is understood as a *"situation in which people protest or argue, especially in public in order to achieve a particular type of change"*.[11] In psychiatry, the term is understood as psychomotor agitation with some definitions highlighting excessive motor or verbal activity,[5] and others highlighting the presence of motor restlessness, associated mental tension, with or without behavioral decontrols.[12] United States Expert Consensus Panel for Behavioral Emergencies [13] defines agitation as *"abnormal and excessive verbal, physical aggressiveness, and /or purposeless motor behaviors associated with heightened arousal and significant impairment in functioning"*. Diagnostic and Statistical Manual, fifth edition (DSM-5), [14] defines agitation as *"excessive motor activity associated with a feeling of inner tension. The activity is usually non-productive and repetitious and consists of behaviors such as pacing, fidgeting, wringing of hands, pulling of clothes, and inability to sit still"*. While understanding various definitions, the common theme which emerges is that it is characterised by heightened psychic and motor activity. The motor activity in agitation is usually non-productive and repetitive, which is characterized by restlessness, pacing, fidgeting, wringing of the hands, pulling of clothes and inability to sit still. Additionally, this may be associated with irritability and heightened responsiveness to both internal and external stimuli, and the clinical course is usually unstable.[15] An important aspect of agitation is that it should not be seen as present or absent, but understood as occurring on a continuum, ranging from mild increase in ideation and behaviour to episodes of violence. [16]

Other terms that are commonly used along with agitation are aggression and violence. The basic difference between agitation and aggression is that agitation is excessive motor/verbal activity without any intent, whereas aggression is a behavior which can be provoked or unprovoked and is intended to cause harm.[17] In violence, aggression is associated with higher intensity of emotional arousal.

Epidemiology

The prevalence of agitation varies across various treatment settings and different countries, and ranges from 2.6-52% of all psychiatric emergencies.[18-22] A recent study from Spain evaluated hospital discharge records of 355,000 patients and reported prevalence of agitation to be 1.5%.[23] In terms of specific psychiatric disorders, agitation is commonly associated with schizophrenia and bipolar disorder.[22] However, it is also encountered among patients with personality disorders (borderline and antisocial personality disorders mainly),

generalized anxiety disorder, major depression, panic disorder and cognitive impairment![12,23-25] In terms of prevalence with respect to specific disorders, agitation has been reported as the most common symptom among psychiatric-related emergency visits in patients with psychosis, including schizophrenia, responsible for 21-28% of such visits.[26-27]A multicentric study from Spain[28] which involved 503 inpatients with schizophrenia reported agitation to be a cause of admission among 60,4% of patients, The study further reported that 29.8% of the patients exhibited agitation only, whereas 30,6% of patients were also aggressive, Another study from Italy,[29]which evaluated agitation among 561 inpatients with schizophrenia, reported agitation among 62,6% patients Among patients with bipolar dis order, agitation is more often seen in manic and mixed states as compared to bipolar depression.[30-32] Available data suggests that agitation is the third most common symptom of mania, with a prevalence of 87%.[33,34] A study from Italy[35] reported a lifetime prevalence of psychomotor agitation as 87.9% and 52.4% in bipolar disorder I and II respectively. Prevalence of agitation in major depressive disorder has been reported to be about 18%-39% and presence of same is considered to be a risk factor for switch to mania or mixed state.[35,36] Prevalence of agitation among patients with dementia varies from 10-90%.[37]

There is limited data from India on prevalence of agitation among psychiatric patients. One study reported prevalence of agitation in patients with dementia to be 96.7%, with prevalence being 100% among patients with frontotemporal dementia.[38] Another study which evaluated agitation among psychiatry inpatients reported prevalence to be 19.9 %.[39]

Etiology

In terms of etiology, it is important to remember that besides psychiatric disorders, agitation can be caused by various general medical conditions, neurological diseases, substance use and toxicity with various agents (Table-1), Accordingly, whenever a patient presents with agitation, it is important to evaluate the person for all possible medical conditions, substance intoxication and withdrawal and overdose or withdrawal of medications and other agents. This fact must be kept in mind even in patients with known psychiatric disorders and every new episode of agitation must be evaluated to rule out other causes, before attributing agitation to the psychiatric disorder per se.

Risk factors

A number of demographic and clinical characteristics have been reported to be risk factors for agitation (Table-2), Hence, agitation must be anticipated in patients presenting with these characteristics and such patients must undergo

proper evaluation for agitation from time to time.

Table-1: Causes of agitation[40,41]

General medical condition	• Delirium
	• Metabolic derangements (e.g., hypoglycemia, hyponatremia, hypocalcaemia)
	• Hypoxia
	• Thyroid disease
	• Environmental toxins
Surgical conditions	• Head injury
	• Severe burns
	• Major surgical intervention in recent times
	• Postoperative period (especially among elderly)
Neurological illnesses	• Intracranial mass or hemorrhage
	• Stroke
	• Infection (e.g., meningitis, encephalitis)
	• Seizures (post-ictal phase)
	• Dementia
Toxicity of various causes	• Anticholinergic intoxication
	• Antiepileptic medications
	• Stimulants
	• Steroid psychosis
	• Serotonin syndrome/ Neuroleptic malignant syndrome
	• Alcohol intoxication/withdrawal
Psychiatric disorder	• Psychotic disorder
	• Mood disorders
	• Dementia
	• Anxiety disorder
	• Personality disorder
	• Acute stress reaction/ adjustment disorder
Medication side effects	• Akathisia

Table-2: Risk factors for agitation

- **Demographic factors:** Male, young age, unemployment, single or divorced, lower level of education, living alone.[42-44]
- **Severity of illness:** Higher severity[42]
- **Past history:** Violence, multiple hospitalizations, illegal activities, history of misbehavior with staff or other patients[43-45]
- **Psychosocial factors:** Recent stressful life event
- **Signs and symptoms:** History of major psychiatric illness, suicidal ideation or attempts, autonomic arousal, hostility, non-compliant behavior, cognitive disturbances, substance user[42-46]
- **Conditions of admission:** Involuntary or long-term admission.[43-45]
- **Among critically ill patients:** Delirium, mechanical ventilation, moderate to severe pain[47]
- **Treatment history:** Poor adherence to treatment[45]

Clinical features of agitation

Irrespective of the underlying etiology, agitation manifests in similar way across a range of underlying conditions. The clinical features can be broadly categorized as change in behaviour, cognition and physical parameters (Table-3). Initial symptoms of agitation include motor restlessness along with poor attention and concentration, irritability and hyper-reactivity. As the agitation progresses, other symptoms also become apparent.

Table-3: Clinical features of agitation[1]

Changes in behaviour	Cognitive changes
• Combativeness in attitude • Inappropriate behavior • Hyperreactivity to stimuli • Angry expression • Defiant behavior • Raised tone in speech or silence or refusal to communicate • Emotional state predominated by anxiety, irritability or hostility • Inability to remain calm • Aggression (verbal and/or physical) against self or others • Anxiety • Poor self-control • Accelerated speech • Tendency to indulge in altercation • Aggression • Uncooperativeness • Self-harm • Decreased sleep • Poor motor control • Pacing around • Poor appetite • Crying spells	• Fluctuations and altered levels of consciousness • Confusion • Disorientation • Getting frustrated easily • Delusional ideas and/or hallucinations **Change in physical parameters** • Fever • Tachycardia • Tachypnoea • Hyperventilation • Sweating • Tremor • Neurological signs like gait difficulty

Assessment and management of agitation

Considering the clinical importance of agitation, various professional organizations have come up with guidelines or algorithms for management of agitation. Some of these have been listed in Table-4. Some of these guidelines pertain to management of agitation in emergency settings[48-51] and others are specific for management of agitation in psychiatric disorders only.[1,52-54] Here we would discuss some of the basic principles of management of agitation, which primarily apply to assessment of agitation in a wide range of conditions

encountered in a general hospital setting. Management of agitation, especially the pharmacological management must be guided by the underlying conditions.

Table-4: Some of the guidelines for management of agitation in different psychiatric conditions or different treatment settings

- Critical Issues on the Diagnosis and Management of the Adult Psychiatric Patient in the Emergency Department: A clinical policy issued by the American College of Emergency Physicians (ACEP) [48]
- Violence and Aggression: Short-term management in mental health, health and community Settings. National Institute for Health and Clinical Excellence (NICE) 2015[49]
- The Psychopharmacology of Agitation: Consensus Statement of the American Association for Emergency Psychiatry Project BEIA Psychopharmacology[50]
- The Best Practices in Evaluation and Treatment of Agitation, or Project BETA , developed by the American Association for Emergency Psychiatry[51]
- Expert consensus on assessment and management of agitation in psychiatry[1] Brazilian guidelines for the management of psychomotor agitation. [52]
- Sequential drug treatment algorithm for agitation and aggression in Alzheimer 's and mixed dementia[53]
- Guidelines for the management of agitation in dementia[54]

Management of agitation can be broadly categorized as: evaluation for the cause/etiology, rapid stabilization of the patient's clinical condition, developing a good therapeutic alliance with the patient and deciding about the after-care plan.

Evaluation for the cause/etiology

The first and foremost step for assessment and management of agitation involves ensuring the safety of the person and others.[45] This can be done by moving the agitated person to a safe environment, which will ensure proper evaluation for the underlying cause of agitation. Once, verbal de-escalation has been done, proper assessment is required to evaluate the risk factors, severity of agitation, risk for future agitation and possible causes of agitation.[55]

Initial evaluation should focus on evaluating the risk factors for agitation, and risk of harm to self and others in the vicinity. Severity of agitation and its future risk can be assessed by using validated scales. Various scales which can be used for assessment of agitation include Brief Agitation Rating Scale,[56,57] Aggressive Behavior Scale,[53] Agitated Behavior Scale,[59-60] Clinical Global Impression Scale for Aggression,[61] Cohen-Mansfield Agitation Inventory,[62,63] Neurobehavioral Rating Scale- Revised,[64] Overt Aggression Scale,[65] Overt Agitation Severity Scale,[66,67] Broset Violence Checklist (BVC).[68,69]

Positive and Negative Syndrome Scale-Excited Component,[70-74] Ryden Aggression Scale,[75-77] and Richmond Agitation and Sedation Scale.[78-79] Assessment on some of these scales can take few minutes to up to 30 minutes. Clinicians can choose the scales as per the feasibility. As an example, Overt Agitation Severity Scale (OASS) can be used to rate the observed behaviour during the 15 minutes of observation. This scale has 12 items, which assess vocalizations and oral/facial movements and upper torso and upper extremity movement. Each item is rated on a 5-point scale, ranging from absent (0) to always present (4) for both frequency and intensity. The severity score for each item is then computed by multiplying the intensity and the frequency scores. [66,67]

Proper assessment to identify the possible etiology is very important, as this aids in proper management of these patients. During the initial evaluation, clinicians should focus on vital signs, past history, and current medical and psychiatric history. Additionally, a thorough examination of the patient must be done to assess the general appearance, behaviour, level of consciousness, evidence for any attentional deficits and other cognitive disturbances.[13] Evaluation should also focus on looking for evidence of any abnormal odour, which can provide important clues for possibility of substance intoxication or withdrawal, diabetic ketoacidosis, intake of poisons and toxins, etc. Information should be obtained from all possible sources, including review of medical records.[80] When agitation is encountered for the first time, and the underlying cause is not clear, it should always be presumed to be arising due to an underlying general medical condition, until proved otherwise.[1] In such a scenario, clinicians should focus on certain clinical features, which can help in distinguishing agitation associated with primary psychiatric disorders from underlying general medical condition (Table-5).

Agitation occurring for the first time among persons aged >40 years, which is sudden in onset, associated with presence of visual hallucinations and emotional lability, attentional deficits and altered level of consciousness, point towards presence of underlying general medical condition.[45] While obtaining the history and carrying out the physical examination, a proper general physical examination can often provide clues for the possible underlying etiology (Table-6). Due importance should be given to medication history as this can provide important clues of agitation being an outcome of use of certain medications or due to poor compliance with the ongoing psychotropic medications. Similarly, while obtaining history, clinicians should also enquire about any change of medication regimen in the recent past, in form of addition, dose escalation or reduction and discontinuation of medications. Medication induced agitation is usually seen among elderly patients, among those with impaired hepatic and/or renal insufficiency and

use of higher doses or supratherapeutic doses, especially the agents with narrow therapeutic range.[1,45]

Table-5: Distinguishing features of agitation due to primary psychiatric disorder versus agitation associated with general medical condition[14,16,45]

	Primary Psychiatric Disorder	Underlying General Medical Condition
Age	Usually <40 years	Usually >40 years
Onset of agitation	Gradual	Sudden
Past psychiatric history	Present	Absent
Vital signs	Usually normal	Usually abnormal
Physical examination	Usually normal	Usually abnormal
Type of hallucinations	Auditory	Visual
Emotional state	Flat, cheerful, sad	Emotional lability
Attention and Concentration	Usually intact	Often impaired
Level of consciousness	Usually alert	Impaired, fluctuations

Table adapted from ref[16,45]

Table-6: History and physical examination findings pointing toward possible underlying etiology [1,16,45,52]

Clinical features	Medical conditions
Polyuria, polydipsia	Diabetes mellitus
Tachycardia, fluctuating blood pressure	Serotonin syndrome, neuroleptic malignant syndrome, anticholinergic toxicity, alcohol and drug intoxication or withdrawal, sepsis
Dilated pupils	Alcohol or opioid withdrawal
Pin-pointed pupils	Organophosphorous poisoning
Hyperthermia, diaphoresis	Serotonin syndrome, neuroleptic malignant syndrome, anticholinergic toxicity, alcohol and drug intoxication or withdrawal, sepsis
Aphasia	Stroke

Investigation findings can further provide clues to underlying etiology of agitation. Besides the basic investigations (Table-7), further optional investigations might be needed, based on the available history (Table-7). However, before ordering for the optional investigations, cost-benefit must be considered.

An important aspect of evaluation also involves focusing on patients' cognitive functioning. This can often help in distinguishing patients of delirium

from primary psychiatric disorders. Patients of delirium with agitation would more often have acute onset of symptoms, with fluctuation in the course of the symptoms, evening worsening of symptoms, disturbance in the attention, altered level of consciousness, disorientation, visual rather than auditory hallucinations, emotional lability and incoherent speech and altered sleep wake cycle.

Table-7: Investigations to be considered in a patient with agitation suspected to be due to underlying medico-surgical cause[16,52]

Basic investigations

- Arterial blood gas analysis
- Haemogram along with erythrocyte sedimentation rate
- Serum electrolytes-sodium, potassium, calcium
- Blood glucose levels
- Liver function test
- Renal function test
- Therapeutic drug levels depending on the history
- Urine drug screen for substance use
- Blood alcohol levels
- Electrocardiogram
- Urinalysis
- Thyroid function test
- Screening for acquired immune deficiency syndrome/human immunodeficiency virus (AIDS /HIV) screening

Optional investigations

- **Neuroimaging:** Atypical clinical picture, new onset agitation after 40-45 years of age in the absence of past psychiatric history, history of head trauma in recent times, delirium, headache, neurological deficits
- **Lumber puncture:** Evidence of meningitis, meningo-encephalitis
- **Blood and Urine culture:** Sepsis, fever
- **Nutritional deficiencies:** B_{12} deficiency, thiamine deficiency
- **Others:** Serum ammonia levels, creatine phosphokinase levels, work-up for systemic lupus erythematosus, syphilis, demyelinating disorders etc

Rapid stabilization of the patient's condition

Interventions for agitation should be immediate, step-wise and keeping the safety of everyone in mind. Traditional coercive methods for treating agitation have been gradually replaced by non-coercive methods.[81] Once agitation is treated, systematic assessment of level of sedation should be performed. The basic aim should be to calm down the patient with minimal adverse effects of the methods used. The measures which can be used include environmental manipulation, verbal de-escalation, physical/mechanical restraints and seclusion, and pharmacological interventions.[82]

Environmental modifications and safety concerns: Initial concern in the management of agitation should be the safety of the patient and those nearby.[83] Safety of physician and staff members is also very important. Interviewing such a patient alone is not recommended. All items or objects that can be potentially dangerous should be removed and if possible, patient should be shifted to an isolation room (Table-8). Avoid prolonged or intense direct eye contact, and body language and positions are also important. [82,84]

Table-8: Environmental manipulations while dealing with a patient with agitation[82,84]

- Physical comfort of the patient
- Decreasing external stimuli and isolation (a quiet separate room)
- Removing all such objects that can be potentially dangerous
- Minimising waiting period
- The way in which staff members approach the patient should be monitored

Besides environmental modifications, it is also important to be aware about the attitude required for dealing with an agitated patient. Certain attitudinal do's and don'ts which must be followed while interacting with an agitated and violent patient are listed in Table-9.

Verbal de-escalation: The most common method used for calming down an agitated patient is verbal de-escalation. The 10 basic principles of verbal de-escalation have been laid down by the American Association for Emergency Psychiatry De-escalation Workgroup[81] (Table-10). These must be used as the basic framework for interacting with an agitated patient. The basic aim of the verbal de-escalation is to calm down the patient as rapidly as possible, minimize the chances of harm to self or others, help the patient to manage his/ her emotions and distress, help the patient to regain control over self, make the patient cooperate for detailed physical examination and diagnostic procedures and avoid the use of physical restraints.

Physical/ mechanical restraints and seclusion: As previously mentioned, these were the traditional methods for management of agitated/ violent patients in psychiatry.[86] Restraint involves methods to restrict the body movements and seclusion is referred as the method where patient is kept in a bare room.[87] There is much controversy regarding the use of restraints and seclusion for the agitated patients. Due to potential deleterious physical as well as psychological effects, there have been debates on their use.[88] As per one guideline, [89] there may be clinical situations in which verbal techniques are not effective and the use of restraint and/or seclusion may become necessary to prevent any injury/harm to the patient or staff.

Where ever possible, use of physical restraints must be avoided and should never be used for convenience or punishment. This should only be used, when

Tuble-9: Do's and Don'ts while dealing with a patient with agitation[52,82,85]

- Do not approach the patient alone
- Introduce yourself and other staff members to the patient
  Avoid directly staring at the patient
- Avoid abrupt movements
- Speak slowly but firmly
- Use open ended questions
- Answer to all the questions of the patient in a soft reassuring tone, honestly
- Use simple language and short sentences
- Be empathetic
- Communicate to the patient that he/she is expected to maintain self-control and the staff can help them achieve the same
- Redirect the questions when disruptive questions are posed by the patient
  Reassure the patient that you have understood him/her
- Body language of the interviewer should be non-threatening
- Be non-judgmental, prefer reflective statements rather than judgmental statements
  Always keep your hands in such a way that these are visible to the patient
- Keep the door of the room open and try to be near the door, so that, if required you can escape
- Maintain distance from the patient- maintain a gap of at least an arm's length
- Stay to the side of the patient - face the patient sideways
- Avoid cluttering around and make the environment safe
- Be aware and have means for help, if required
- Trust your gut feeling about the patient and the emerging situation
- Enquire about suicidal or homicidal plans
- Ask for access to weapons and remove the same
- Search the patient for dangerous objects and remove them
- Do not have anything hanging around you or in your neck (e.g., stethoscope)
- Do not allow patient to keep objects that can be potentially dangerous
- Do not allow access to hot beverages, glass or sharp objects
- Do not get intimidated by the patient or feel embarrassed
- Do not continue with the interview if you are feeling threatened
- Do not attempt to restraint or hold the patient, especially when you are alone
- Do not allow the patient to be unattended
- Do not confront the patient, his ideas or reasoning
- Do not take notes
- Do not threaten or humiliate the patient

Table-10: 10 key recommendations for verbal de-escalation[81]

• Respect personal space (patient and self) and maintain a safe distance
• Do not provoke the patient (directly or indirectly)
• Identify one person who will indulge in verbal communication with the patient and try to establish verbal contact
• Be concise while interacting with patient; choose simple language, persist with the message which you want to convey to the patient
• Identify what are the needs, wants and feelings of the patient
• Be a good listener: show interest and pay attention to what the patient is saying Look for points on which you agree or agree to disagree
• With due respect and reasoning set clear limits
• Give suggestions about possible alternatives to violence and provide hope to the patient
• To prevent future escalation, debrief the patient and staff

verbal de-escalation and other non-coercive measures to address agitation have failed and persistent agitation is associated with risk of harm to self or others. It is recommended that the person engaged in communication with the patient during the verbal de-escalation process should leave the room and call for the restraint team.[89] All staff members in emergency department and acute settings should be aware and well versed with the types of restraint used in their settings and how to apply them appropriately, monitoring, and assessment of potential bodily injury as a result of the restraint.[1] When used, the physical restraints must be used in a humane way and should comply with the Mental Health Care Act (2017).[90] When the patient is physically restrained, he/she should be monitored closely to avoid any kind of complications. Once the procedure of restraint is complete, efforts must be made to resume the verbal de-escalation and pharmacological agents can also be given to calm down the patient. Physical restraints should be removed as early as possible depending upon the need.[1,82,91]

Pharmacological treatment: The main aim of pharmacological treatment is to rapidly calm the patient without over-sedation. It is usually indicated when non-pharmacological methods fail or are not indicated/ feasible.[92]

The pharmacological management which can be used for management of agitation can be categorized into first generation antipsychotics (FGA), second generation antipsychotics (SGA), and benzodiazepines (BZDs). Details of maximum doses and the routes of administration of various agents are given in Table-11.[40] Usually benzodiazepines are preferred while treating agitation due to substance withdrawal (especially alcohol) and post-ictal agitation. Otherwise antipsychotic medications are usually preferred unless there are some contraindications. Various routes of administration can be

employed based on the appropriateness of patient's condition and rapidity of onset. These are: oral, intravenous, intramuscular, nasal spray. Intranasal spray (loxapine), sublingual (asenapine, olanzapine, risperidone, aripiprazole, quetiapine, ziprasidone, haloperidol) route can be used when patient is cooperative.[1] When the oral route is not feasible, intramuscular (IM) route is preferred over the intravenous (IV) route, since the latter is associated with higher rates of adverse events such as orthostasis, dystonia, and cardiovascular and/or respiratory compromise. Uses of antipsychotics by parenteral route is associated with a higher incidence of acute dystonia and other movement disorder-related adverse events.[93]

All efforts must be made to involve the patient in selection of the pharmacological agent to reduce agitation. An ideal anti-agitation agent is one which is easy to administer, with no/minimal trauma to patient, with rapid onset of action for sufficient duration, without excessive sedation and having low risk of adverse events or drug interactions. However, none of the current pharmacological agents fulfill all of the criteria for an ideal anti-agitation medication.[94]

Table-11: Medications for the treatment of agitated patient[40,51]

Agent	Route of administration	Initial dose in mg	Maximum dose in mg over 24 hours	Possible side effects
Haloperidol	p.o./i.m./i.v.	5	20	Prolongation of QTc interval, EPS, NMS
Olanzapine	p.o./i.m.	5-10	20	Sedation, postural hypotension
Ziprasidone	i.m.	10-20	40	QTc prolongation, renal impairment
Aripiprazole	i.m.	9.75	30	Akathisia, delayed onset
Lorazepam	p.o./i.m./ i.v.	2	12	Over sedation, respiratory depression
Diazepam	p.o./i.v.	10	60-80	Over sedation, respiratory depression
Midazolam	p.o./i.m./i. v.	2	12-15	Over sedation,

p.o. = per os (orally); i.m. = intramuscular; i.v. = intravascular. Caution: concomitant use of Olanzapine and benzodiazepines poses the risk of respiratory depression ; EPS = Extrapyramidal syndrome; NMS = Neuroleptic malignant syndrome.

There is limited data on the comparative efficacy of these agents. Available data from randomized controlled trials (RCTs) suggest that in general there is no significant difference between various antipsychotics (Table-12),[95-102]

except for occasional studies suggesting that olanzapine when combined with lorazepam may be superior to combination of haloperidol and lorazepam. Studies which have compared lorazepam with antipsychotics suggest that the antipsychotics may be superior. However, studies also suggest that use of combination of antipsychotics and lorazepam is superior to use of lorazepam or antipsychotics alone. However, it is important to remember that use of benzodiazepines may lead to respiratory depression. A combination of haloperidol plus promethazine is considered to be effective and safe. In terms of rapidity, in general it is suggested that combination of haloperidol and promethazine has advantages over lorazepam.[98,99,103] However, it must be remembered that these studies and the above given recommendations are for patients who are non-delirious and have agitation in the context of primary psychiatric disorder. Agitation occurring in the context of delirium secondary to medical illnesses should be managed with lower doses of antipsychotics, whereas agitation associated with delirium tremens should be managed with benzodiazepines.

Table-12: Randomized controlled trials comparing various agents in management of agitation

Study	Design	Population	Intervention	Agitation outcomes
Kinan et al.[95]	Randomized, double-blind, parallel-group	N=604 age=l 8-65 years; schizophrenia, schizophreniform or schizoaffective disorder	Oral Olanzapine 20 mg/day (n =306) Oral Aripiprazole (15-30) mg /day (n = 298) Lorazepam up to 4 mg/d as per requirement	Significant reduction in PANSS-EC in both groups (P<0.0001) with no difference among two. Aripiprazole group received higher lorazepam dose (P=0.033)
Currier et al.[96]	Rater-blind non-inferiority, prospective, randomized parallel-group	N=162. Age 18-65. Patients with acute worsening schizophrenia or schizoaffective disorder, mania with psychotic features, acute paranoid reaction	Oral Risperidone 2 mg +Lorazepam 2mg IM (n =83) IM Haloperidol 5mg + Lorazepam 2mg (n = 79)	PANSS-EC mean score improvement significant (P<0.0001) in both groups with no significant difference amongst them (P>0.05)
Veser et al.[97]	Prospective, randomized, double blind placebo	N=30.Psychosis (unspecified)	Oral Risperidone 2mg + lorazepam 2mg IM (n= 10) Oral Haloperidol	**PANSS** assessment at 30 and 90 minutes showing no statistically

	controlled		5mg + Lorazepam 2mg IM (n = 10) Oral placebo+ Lorazepam 2 mg IM (n = 10)	significant difference between groups. First two groups showed trend of increased symptom reduction than third but not significant
TREC collaborative group[98]	Randomised, pragmatic, single blind, 2 sites	N=301. agitation with unspecified psychosis or substance use. Age unspecified	Haloperidol 5-10 mg IM + Promethazine 25-50 mg IM (n =1 50) Midazolam 15 mg IM (n =151)	89% given midazolam were tranquil or asleep after 20 minutes compared with 67% haloperidol plus promethazine and not much change at 60 minutes. P value not given
Alexander et al. [99]	Pragmatic randomized trial	N=200. agitation or violence in people with serious psychiatric disorders	Haloperidol 10 mg+ Promethazine 25- 50 mg *(n* =100) Lorazepam 4 mg IM (n= 1 00)	At 4 hr equal number of patient were asleep in both groups. Time to sleep was significantly faster in combination group (P<0.0001)
Meehan et al. [100]	Double-blind, randomized, placebo controlled	N=272, acutely et agitated patients with dementia. Age> 55 years	Olanzapine 2.5- 5 mg IM (n = 137) Lorazepam 1 mg pam IM (n = 68) Placebo (n = 67)	Olanzapine (5.0 mg, 2.5 mg) and lorazepam (1.0 mg) showed significant improvement at 2 hours compared to placebo (P<0.05) on PANSS-EC
Chan et al. [101].	Randomized, double-blind, placebo-controlled, multisite	N=336, Adult patients requiring intravenous drug sedation for acute agitation	Droperidol 5 mg + Midazolam 2.5-5 mg IV (N= 112) Olanzapine 5 mg + Midazolam 2.5-5mg IV (N= 109) Placebo (Saline) + Midazolam2.5-5 mg IV (N= 115)	Droperidol and olanzapine were faster in achieving sedation than the placebo group with no significant difference in two.
Zhang et al. [102]	Randomized, single-blind, controlled, parallel group, multisite	N=376. Agitation in schizophrenia	Ziprasidone 10- 40 mg IM (N=189) Haloperidol 5- 20 mg IM (N=187)	Baseline to 72 hours, no significant difference in two groups on Brief Psychiatry Rating Scale

Developing a good therapeutic alliance

Through the process of acute management, efforts must be made to develop a good therapeutic alliance with the agitated patient. This is often useful in avoiding further agitation and aggression, and also deciding about long-term care plan. The basic requirements for developing a good therapeutic relationship include empathy, genuineness and positive regard for the patient. Paying attention to the patient, being honest, accepting own limitations, avoiding any kind of value judgment, and encouraging active collaboration of patient in treatment decision making often help in forming a good therapeutic relationship with the patient.[104]

Deciding about the after care plan

Patients with psychiatric illnesses usually require long term management of agitation after acute management. In such patients, choice of initial management with antipsychotic should be based on long-term plan. A partial response to medication/absence of any side effect at adequate plasma levels, usually indicate need for higher doses. If there has been failure of 2 or more adequate trials of antipsychotics in patients suffering from psychotic illness, use of clozapine is recommended.[104] Drug-drug interactions should always be kept in mind to avoid any toxicity or therapeutic failure.

Recommendations for assessment and management of agitation

Whenever a patient presents with agitation, initial attempt must be made to calm down the patient by using environmental measures and verbal de-escalation. Once the patient is manageable, attempt must be made to identify the underlying etiology/cause of agitation. Until proved otherwise, any new onset agitation, even in patients known to have a psychiatric diagnosis, should be considered to be associated with underlying medical illnesses and patients must be investigated to rule out the possible causes. Initial evaluation should focus on ruling out delirium. Apart from this, very careful screening for medical etiologies and their management is required as it can be lifesaving, with agitation being the presenting feature. Delirium is a common underlying diagnosis in patients presenting with agitated behavior. At times it is missed due to various factors like previous history of psychiatric illness, illicit drug use and variable symptomatology. However, high index of suspicion can help in identifying these patients and providing appropriate and timely management. Medical management of underlying cause is very important along with use of low dose antipsychotic medications. Special attention is needed to prevent side effects in the form of extrapyramidal effects (less chances in lower doses) and cardiac effects (QTc prolongation).

In cases of intoxication with substances which are CNS depressants like alcohol or opioids, benzodiazepines should be strictly avoided and agitation should be managed with antipsychotics only. Benzodiazepines are particularly used when agitation is associated with alcohol or benzodiazepine withdrawal or occurring in post-ictal period; otherwise drugs of choice are antipsychotic medications.

Based on the severity of agitation, in patients without delirium, mild agitation can be managed with low dose lorazepam, and moderate to severe agitation can be managed with medications like haloperidol, olanzapine, and ziprasidone with or without benzodiazepines. After initial stabilization, doses should be adjusted according to the requirement both in terms of daily dose and SOS dosing.[105]

Conclusion

Agitation can present across various medical and psychiatric disorders. Agitation has various dimensions but it is very important to understand 2 aspects, i.e., severity and duration. It occurs in a continuum from ideations, anxiety to severe agitation leading to aggression and violence. While managing an agitated patient, it is important to rule out medical illnesses before assessment for psychiatric causes of agitation. Based on the appropriateness of the situation, various assessment tools can be used. These help in establishing the severity as well as course of agitation over time with treatment. Timely and adequate management is of utmost importance to minimize the risk to the patient as well as treating team. Non-pharmacological methods are to be instituted first along with other methods of treatment. Physical restraints are to be used as a method of last resort and for minimum possible time period. Pharmacological treatment has the advantage of rapid tranquillization and sedation. Whenever possible, oral medications should be used, as using parenteral routes can have negative impact on doctor-patient relationship. New expert guidelines recommend the use of second-generation antipsychotics due to better safety profile and similar efficacy.

References

1. Garriga M, Pacchiarotti I, Kasper S, Zeller SL, Allen MH, Vazquez G et al. Assessment and management of agitation in psychiatry: Expert consensus. World J Biol Psychiatry 2016;17:86-128.
2. McNett M, Sarver W, Wilczewski P. The prevalence, treatment and outcomes of agitation among patients with brain injury admitted to acute care units. Brain Inj 2012;26:1155-62.

3. Tractenberg RE, Weiner MF, Thal LJ. Estimating the prevalence of agitation in community-dwelling persons with Alzheimer's disease. J Neuropsychiatry Clin Neurosci 2002;14:11-8.
4. Downey LV, Zun LS, Gonzales SJ. Frequency of alternative to restraints and seclusion and uses of agitation reduction techniques in the emergency department. Gen Hosp Psychiatry 2007; 29:470-4.
5. Citrome L. Agitation III: Pharmacologic treatment of agitation. In: Glick RL, Berlin AB, Fishkind AB, Zeller SL, eds. Emergency Psychiatry: Principles and Practice. Philadelphia, PA: Wolters Kluwer Health/ Lippincott Williams & Wilkins 2008;137 -147.
6. Jaffe A, Levine J, Citrome L. "Stat" medication administration predicts hospital discharge. Psychiatr Q 2009;80:65-73.
7. Barlow K, Grenyer B, Ilkiw-Lavalle O. Prevalence and precipitants of aggression in psychiatric inpatient units. Aust N Z J Psychiatry 2000; 34:967-74.
8. Flood C, Bowers L, Parkin D. Estimating the costs of conflict and containment on adult acute inpatient psychiatric wards. Nurs Econ 2008; 26:325-30.
9. Sani G, Tondo L, Koukopoulos A, Reginaldi D, Kotzalidis GD, Koukopoulos AE, et al. Suicide in a large population of former psychiatric inpatients. Psychiatr Clin Neurosci 2011;65:286- 95.
10. McClure JR, Criqui MH, Macera CA, Ji M, Nievergelt CM, Zisook S. Prevalence of suicidal ideation and other suicide warning signs in veterans attending an urgent care psychiatric clinic. Compr Psychiatry 2015; 60:149-155.
11. Cambridge Academic Content Dic tionary © Cambridge University Press
12. Battaglia J. Pharmacological management of acute agitation. Drugs 2005; 65:1207-22.
13. Allen MH, Currier GW, Carpenter D, Ross RW, Docherty JP. Expert Consensus Panel for Behavioral Emergencies. The Expert Consensus Guideline Series: treatment of behavioral emergencies 2005. J Psychiatr Pract 2005; 11:5-108.
14. APA (American Psychiatric Association). Diagnostic and statistical manual of mental disorders, 5th edition 2013.Washington (DC): American Psychiatric Publishing.
15. Lindenmayer JP. The pathophysiology of agitation. J Clin Psychiatr 2000; 61:5-10.

16. Sacchetti E, Amore M, Sciascio GD, Ducci G, Girardi P, Mauri M. Psychomotor agitation in psychiatry: an Italian Expert Consensus. Evidence Based Psychiatry Care 2017;3:1-24.
17. Volicer L, Citrome L, Volavka J. Measurement of agitation and aggression in adult and aged neuropsychiatric patients: review of definitions and frequently used measurement scales. CNS spectr 2017;22:407-14.
18. Pascual JC, Madre M, Puigdemont D, Oller S, Corripio I, Diaz A et al. A naturalistic study: 100 consecutive episodes of acute agitation in a psychiatric emergency department. Actas Espai'iolas de Psiquiatria. 2006; 34:239-44.
19. Pajonk FG, Schmitt P, Biedler A, Richter JC, Meyer W, Luiz T et al. Psychiatric emergencies in prehospital emergency medical systems: a prospective comparison of two urban settings. Gen Hosp Psychiatry. 2008; 30:360-6.
20. Brakoulias V, Mandali R, Seymour J, Sammut P, Starcevic V. Characteristics of admissions to a recently opened Psychiatric Emergency Care Centre. Australas Psychiatry 2010; 18:326-9.
21. Grudnikoff E, Taneli T, Correll CU. Characteristics and disposition of youth referred from schools for emergency psychiatric evaluation. Eur Child Adolesc Psychiatry 2015;24:731-43.
22. San L, Marksteiner J, Zwanzger P, Figuero MA, Romero FT, Kyropoulos G, et al. State of Acute Agitation at Psychiatric Emergencies in Europe: The STAGE Study. Clin Pract Epiderniol Ment Health 2016;12:75-86.
23. Cots F, Chiarello P, Perez V, Gracia A, Becerra V. Hospital costs associated with agitation in the acute care setting. Psychiatr Serv 2015; 67:124-7.
24. Fountoulakis KN, Leucht S, Kaprinis GS. Personality disorders and violence. Curr Opin Psychiatr 2008; 21:84-92.
25. Nordstrom K, Allen MH. Managing the acutely agitated and psychotic patient. CNS Spectr 2007; 12:5- 11.
26. Hazlett SB, McCarthy ML, Londner MS, Onyike CU. Epidemiology of adult psychiatric visits to US emergency departments. Acad Emerg Med 2004; 11:193-5.
27. Allen MH, Currier GW. Use ofrestraints and pharmacotherapy in academic psychiatric emergency services. Gen Hosp Psychiatr 2004;26:42-49.
28. Orta-Rodriguez J, Riesgo X Vieitez P, Alonso B. Prevalence of agitation-hostility during acute episodes in patients with schizophrenia. Eur Psychiatry 2007;22:S329-30.

29. Sacchetti E. Presented at the 2016 Brixia International Conference, Brescia, Italy, June 9-11,2016.

30. Perugi G, Akiskal HS, Micheli C, Toni C, Madaro D. Clinical characterization of depressive mixed state in bipolar-I patients: Pisa-San Diego collaboration. J Affect Disord 2001;67:105-14.

31. Pacchiarotti I, Bond DJ, Baldessarini RJ, Nolen WA, Grunze H, Licht RW et al. The International Society for Bipolar Disorders (ISBD) task force report on antidepressant use in bipolar disorders. Am J Psychiatry 2013;170:1249-62.

32. Perugi G, Angst J, Azorin JM, Bowden CL, Mosolov S, Reis J et al. BRIDGE-II-Mix Study Group. Mixed features in patients with a major depressive episode: the BRIDGE-II-MIX study. J Clin Psychiatry 2015; 76:e35l-58.

33. Goodwin FK, Jamison KR. Manic-Depressive Illness. New York: Oxford University Press 1990.

34. Keck PE Jr, McElroy SL, Arnold LM. Bipolar disorder. Med Clin North Am 2001; 85:645-61

35. SerrettiA, Olgiati P Profiles of "manic" symptoms in bipolar I, bipolar II and major depressive disorders. J Affect Disord 2005; 84:159-66.

36. lwanami T, Maeshima H, Baba H, Satomura E, Namekawa Y, Shimano T et al. Psychomotor agitation in major depressive disorder is a predictive factor of mood-switching. J Affect Disord 2015;170:185-9.

37. Bartels SJ, Horn SD, Smout RJ, DumsAR, Flaherty E, Jones JK, Monane M, Taler GA, Voss AC. Agitation and depression in frail nursing home elderly patients with dementia: treatment characteristics and service use. Am J Geriatr Psychiatry 2003;11:231-8.

38. Srikanth S, Nagaraja AV, Ratnavalli E. Neuropsychiatric symptoms in dementia-frequency, relationship to dementia severity and comparison in Alzheimer's disease, vascular dementia and frontotemporal dementia. J Neurol Sci 2005;236:43-8.

39. George C, Jacob TR, Kumar AV. Pattern and correlates of agitation in an acute psychiatry in-patient setting in a teaching hospital. Asian J Psychiatr 2016;19:68-72.

40. Gottlieb M, Long B, Koyfman A. Approach to the agitated emergency department patient. J Emerg Med 2018; 54:447-57.

41. Nordstrom K, Zun LS, Wilson MP, Md VS, Ng AT, Bregman B et al. Medical evaluation and triage of the agitated patient: consensus statement

of the American association for emergency psychiatry project Beta medical evaluation workgroup. West J Emerg Med 2012;13:3-10.

42. Chaput XBeaulieu L, Paradis M, Labonte E. Aggressive behaviors in the psychiatric emergency service. Open Access Emerg Med 2011; 3:13-20
43. Dack C, Ross J, Papadopoulos C, Stewart D, Bowers L. A review and meta-analysis of the patient factors associated with psychiatric in-patient aggression. Acta Psychiatr Scand 2013;127:255-68.
44. Comaggia CM, Beghi M, Pavone F, Barale F. Aggression in psychiatry wards: a systematic review. Psychiatry Res 2011; 189:10-20
45. Vieta E, Garriga M, Cardete L, Bernardo M, Lombrana M, Blanch J, Catalan R, Vazquez M, Soler V, Ortufio N, Martinez-Aran A. Protocol for the management of psychiatric patients with psychomotor agitation. BMC psychiatry 2017;17:328.
46. Hankin CS, Bronstone A, Koran LM. Agitation in the inpatient psychiatric setting: a review of clinical presentation, burden, and treatment. J Psychiatr Pract 2011;17:170-85.
47. Almeida TM, Azevedo LC, Nose PM, Freitas FG, Machado FR. Risk factors for agitation in critically ill patients. Rev Bras Terlntensiva 2016; 28:413-9.
48. Lukens TW, Wolf SJ , EdlowJa, Shahabuddin S, Allen MH, Currier GW, et al. Clinical policy: critical issues in the diagnosis and management of the adult psychiatric patient in the emergency department. Ann Emerg Med 2006;47:79- 99.
49. National Collaborating Centre for Mental Health (UK). Violence and Aggression: short-term management in mental hea lth, health and community settings: updated edition. London: British Psychological Society, 2015.
50. Holloman GH, Zeller SL. Overview of Project BETA: Best practices in evaluation and treatment of agitation. West J Emerg Med 2012;13:1-2.
51. Wilson MP, Pepper D, Currier GW, Holloman GH Jr, Feifel D. The psychopharmacology of agitation: consensus statement of the American Association for Emergency Psychiatry Project Beta Psychopharmacology Workgroup. West J Emerg Med 2012; 13:26-34.
52. Balda9ara L, Ismael F, Leite V, Pereira LA, dos Santos RM, Gomes Junior VD et al. Brazilian guidelines for the management of psychomotor agitation. Part 1. Non-pharmacological approach. Braz J Psychiatry 2019; 41:153-167.

53. Davies SJ, Burhan AM, Kim D, Gerretsen P, Graff-Guerrero A, Woo VL et al. Sequential drug treatment algorithm for agitation and aggression in Alzheimer's and mixed dementia. J Psychopharmacol 2018; 32:509-23.
54. Howard R, Ballard C, O'Brien J, Burns A. Guidelines for the management of agitation in dementia. Int J Geriatr Psychiatry 2001; 16:714-7.
55. Stowell KR, Florence P, Harman HJ, Glick RL. Psychiatric evaluation of the agitated patient: consensus statement of the American association for emergency psychiatry project Beta Psychiatric Evaluation Workgroup. West J Emerg Med 2012; 13:11- 16.
56. Finkel SI, Lyons JS, Anderson RL. Brief agitation rating scale (BARS) for nursing home elderly. J Am Geriatr Soc 1993; 41:50- 52.
57. LasalviaA, Bonetto C, Cristofalo D, Tansella M, Ruggeri M. Predicting clinical and social outcome of patients attending 'real world' mental health services: A 6-year multi-wave follow-up study. Acta Psychiatr Scand Suppl 2007;16- 30.
58. Perlman CM, Hirdes JP. The aggressive behavior scale: A new scale to measure aggression based on the minimum data set. J Am Geriatr Soc 2008; 56:2298- 2303.
59. Zun LS, Downey LV Level of agitation of psychiatric patients presenting to an emergency department. Prim Care Companion J Clin Psychiatry 2008;10:108-113.
60. Corrigan JD. Development of a scale for assessment of agitation following traumatic brain injury. J Clin Exp Neuropsychol 1989; 11:261 - 277.
61. Huber CG, Lambert M, Naber D, Schacht A, Hundemer HP, Wigner TT et al. Validation of a Clinical Global Impression Scale for Aggression (CGI-A) in a sample of 558 psychiatric patients. Schizophr Res 2008; 100:342- 348.
62. Cohen-Mansfield J. Conceptualization of agitation: Results based on the Cohen-Mansfield Agitation Inventory and the Agitation Behavior Mapping Instrument. Int Psychogeriatr 1996;8:309-315.
63. Shah A, Evans H, Parkash N. Evaluation of three aggression/agitation behaviour rating scales for use on an acute admission and assessment psychogeriatric ward. Int J Geriatr Psychiatry 1998;13:415-420.
64. Vanier M, Mazaux JM, Lambert J, Dassa C, Levin HS. Assessment of neuropsychologic impairments after head injury: Interrater reliability and factorial and criterion validity of the Neurobehavioral Rating Scale-Revised. Arch Phys Med Rehabil 2000; 81:796-806.

65. Tudofsky SC, Silver JM, Jackson W, Endicott J, Williams D. The Overt Aggression Scale for the objective rating of verbal and physical aggression. Am J Psychiatry 1986;143:35-39.

66. McNiel DE, Gregory AL, Lam JN, Binder RL, Sullivan GR. Utility of decision support tools for assessing acute risk of violence. J Consult Clin Psychol 2003;71:945-53.

67. Tudofsky SC, Kopecky HJ, Kunik M, Silver JM, Endicott J. The Overt Agitation Severity Scale for the objective rating of agitation. J Neuropsychiatry Clin Neurosci 1997;9:541-548.

68. Kopecky HJ, Kopecky CR, Tudofsky SC. Reliability and validity of the Overt Agitation Severity Scale in adult psychiatric inpatients. Psychiatr Q 1998;69:301-323.

69. Almvik R, Woods P, Rasmussen K. The Broset Violence Checklist. Sensitivity, specificity, and interrater reliability. J Interpers Violence 2000; 15:1284-1296.

70. Sachs GS, Gaulin BD, Gutierrez-Esteinou R, McQuade RD, Pultz JA, Sanchez R et al. Antimanic response to aripiprazole in bipolar I disorder patients is independent of the agitation level at baseline. J Clin Psychiatry 2007; 68:1377-1383.

71. Currier GW, Citrome LL, Zimbroff DL, Oren D, Manos G, Mcquade R et al. Intramuscular aripiprazole in the control of agitation. J Psychiatr Pract. 2007;13:159-169.

72. Marder SR, West B, Lau GS, Pultz JA, Pikalov A, Marcus RN et al. Aripiprazole effects in patients with acute schizophrenia experiencing higher or lower agitation: Apost hoc analysis of 4 randomized, placebo-controlled clinical trials. J Clin Psychiatry 2007;68:662-668.

73. Breier A, Meehan K, Birkett M, David S, Ferchland I, Sutton V et al. A double-blind, placebo-controlled dose-response comparison of intramuscular olanzapine and haloperidol in the treatment of acute agitation in schizophrenia. Arch Gen Psychiatry 2002;59:441- 448.

74. Chaichan W Evaluation of the use of the positive and negative syndrome scale-excited component as a criterion for administration of p.r.n. medication. J Psychiatr Pract 2008; 14:105- 113.

75. Ryden MB. Aggressive behavior in persons with dementia who live in the community. Alzheimer Dis Assoc Disord 1988; 2:342- 355.

76. Gibbons P, Gannon M, Wrigley M. Astudy of aggression among referrals to a community-based psychiatry of old age service. Int J Geriatr Psychiatry 1997;12:384-388.

77. Oh H, Eom M, Kwon Y. A study on aggressive behavior among nursing home residents with cognitive impairment. Taehan Kanho Hakhoe Chi 2004; 34:1451-1459.
78. Sessler CN, Gosnell MS, Grap MJ, Brophy GM, O'neal PV, Keane KA et al. The Richmond Agitation-Sedation Scale: validity and reliability in adult intensive care unit patients. Am J Respir Crit Care Med 2002;166:1338-44.
79. Ely EW, Truman B, Shintani A, Thomason JWW, Wheeler AP, Gordon S et al. Monitoring sedation status over time in ICU patients: the reliability and validity of the Richmond Agitation Sedation Scale (RASS). JAMA 2003; 289:2983-91.
80. Kassis H. Assessment and management of acute agitation. Crisp witting, LLC.
81. Richmond JS, Berlin JS, Fishkind AB, Holloman GH, Zeller SL, Wilson MP et al. Verbal de -escalation of the agitated patient: consensus statement of the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup. West J Emerg Med 2012;13:17-25.
82. Petit JR. Management of the acutely violent patient. Psychiatr Clin North Am 2005;28:701- 11.
83. Schleifer JJ. Management of acute agitation in psychosis: an evidence- based approach in the USA. Adv Psychiatr Treat 2011; 17:91- 100.
84. Ramadan M. Managing psychiatric emergencies. Internet J Emerg Med 2006; 4: Available from: https://is pub.com/IJEM/4/1/13551 (Last accessed Mar 9, 2019).
85. Mantovani C, Labate CM, Sponholz A, de Azevedo Marques JM, Guapo VG, de Simone Brito dos Santos ME et al. Are low doses of antipsychotics effective in the management of psychomotor agitation? A randomized, rated-blind trial of 4 intramuscular interventions. J Clin Psychopharmacol 2013; 33:306-12.
86. American Psychiatric Association. Diagnostic and Statistical Manual on Mental Disorders, third edition-revised 1987. Washington (DC): American Psychiatric Publishing.
87. Gutheil TG. Restraint versus treatment: seclusion as discussed in the Boston State Hospital case. Am J Psychiatr 1980; 137:718-9.
88. Fisher WA. Restraint and seclusion: a review of the literature. Am J Psychiatry 1994;151:1584-91.
89. Knox DK, Holloman GH. Use and avoidance of seclusion and restraint: consensus statement of the American Association for emergency

psychiatry project Beta seclusion and restraint workgroup. West J Emerg Med 2012;13:35-4 0.

90. The Mental Health Care Act 2017. Government of India, New Delhi.
91. Marder SR. A review of agitation in mental illness: Treatment guidelines and current therapies. J Clin Psychiatry 2006;67:13- 21
92. Baker SN. Management of acute agitation in the emergency department. Adv Emerg Nurs J 2012; 34:306-18.
93. Rummel-Kluge C, Komossa K, Schwarz S, Hunger H, Schmid F, Kissling W et al. Second-generation antipsychotic drugs and extrapyramidal side effects: a systematic review and meta-analysis of head-to-head comparisons. Schizophr Bull 2010;38:167-77.
94. Ng AT, Zeller SRR. Clinical challenges in the pharmacologic management of agitation. Prim Psychiatr 2010;18:46- 52.
95. Kinon BJ, Stauffer VL, Kollack-Walker S, Chen L, Sniadecki J. Olanzapine versus aripiprazole for the treatment of agitation in acutely ill patients with schizophrenia. J Clin Psychopharmacol 2008;28:601-607.
96. Currier GW, Chou JC, Feifel D, Bossie CA, Turkoz I, Mahmoud RA, et al. Acute treatment of psychotic agitation: A randomized comparison of oral treatment with risperidone and lorazepam versus intramuscular treatment with haloperidol and lorazepam. J Clin Psychiatry 2004; 65:386-94.
97. Veser FH, Veser BD, McMullan JT, Zealberg J, Currier GW Risperidone versus haloperidol, in combination with lorazepam, in the treatment of acute agitation and psychosis: a pilot, randomized, double-blind, placebo-controlled trial. J Psychiatr Prac 2006;12:103-8.
98. TREC Collaborative Group. Rapid tranquillisation for agitated patients in emergency psychiatric rooms: A randomised trial of midazolam versus haloperidol plus promethazine. BMJ 2003;327:708-13.
99. Alexander J, Tharyan P, Adams C, John T, Mol C, Philip J. Rapid tranquillisation of violent or agitated patients in a psychiatric emergency setting: pragmatic randomis ed trial of intramuscular lorazepam v. haloperidol plus promethazine. Br J Psychiatry 2004;185:63-9.
100. Meehan KM, Wang H, David SR, Nisivoccia JR, Jones B, Beasley Jr CM et al. Comparison of rapidly acting intramuscular olanzapine, lorazepam, and placebo: A double-blind, randomized study in acutely agitated patients with dementia. Neuropsychopharmacology 2002; 26:494- 504.

101. Chan EW, Taylor DM, Knott JC, Phillips GA, Castle DJ, Kong DCM. Intravenous droperidol or olanzapine as an adjunct to midazolam for the acutely agitated patient: A multicenter, randomized, double-blind, placebo-controlled clinical trial. Ann Emerg Med 2013;61:72- 81.

102. Zhang H, Wang G, Zhao J, Xie S, Xu X, Shi J et al. Intramuscular ziprasidone versus haloperidol for managing agitation in Chinese patients with schizophrenia. J Clin Psychopharmacol 2013; 33:178- 85.

103. Huf G, Alexander J, Allen MH. Haloperidol plus promethazine for psychosis induced aggression. Cochrane Database Syst Rev 2005; :CD005146.

104. Beauford JE, McNiel DE, Binder RL. Utility of the initial therapeutic alliance in evaluating psychiatric patients' risk of violence. Am J Psychiatry 1997; 154:1272-6.

105. Stahl SM, Morrissette DA, Cummings M, AzizianA, Bader S, Broderick C, Dardashti L, Delgado D, Meyer J, O'Day J, Proctor G. California state hospital violence assessment and treatment (Cal-VN) guidelines. CNS Spectr 2014;19:449-65.

Chapters

Assessment and Management of Suicide Attempt in Emergency Setting

Aniruddha Basu[1], Sai Chaitanya Reddy[2], Parvesh Batra[3]

[1]Department of Psychiatry, All India Institute of Medical Sciences, Rishikesh-249203

[2]Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh-160012

[3]Department of Psychiatry, Post Graduate Institute of Medical Sciences, Rohtak-12400 I

Abstract:

Suicide is a major public health problem. Emergency settings usually form the first contact for most of the suicide attempters. Initially medical stability and safety of the patient are to be ensured. A first-hand assessment is made by any qualified medical practitioner and then the psychiatrist is involved. Thereafter, the treatment setting is decided based upon risk factors like past suicide attempt, comorbid medical and psychiatric ill nesses, family history, substance use, psychosocial stressors, temperamental instability, availability of means and protective factors, suicidal intent, lethality and social support. For the clinician it is always better to err on the side of hospitalization and all high-risk individuals should be offered in-patient treatment. For suicidal assessment in emergency settings, it is most important for the clinician to maintain an empathic approach while taking details from the patient and caregivers. In an uncooperative patient, behavioral observation often yields useful clues to the underlying intent. Family members and significant others should always be involved even in the so called 'low risk' individuals. 'Continued care' should always be implemented as suicide can never be predicted with absolute accuracy.

A few 'typical' individuals with suicidal attempt presenting to emergency settings -

Case-vignette A - A person diagnosed with cancer attempts suicide as he feels hopeless with an 'incurable disease'. He has sadness with anhedonia, pessimism and impaired biological functions.

Case-vignette B -A farmer with huge debt due to crop failure is having low mood, severe anhedonia and psychomotor retardation. He has hopelessness and consumes pesticide to die.

Case-vignette C -A 19-year-old adolescent girl, married early by family against her wish, with dowry related harassment and domestic violence by in-laws resorts to hanging.

Case-vignette D - An unemployed youth with alcohol dependence in an intoxicated state consumed rodenticide - alcohol gave him the courage for attempt.

Introduction

As per Global Burden of Disease Study (GBD) 2016 estimation, approximately 8,17,000 and 2,30,000 suicidal deaths occurred worldwide and in India respectively.[1] Past suicidal attempt, one of its strongest predictors, refers to 'a self-injurious behavior with a non fatal outcome accompanied by evidence (either explicit or implicit) that the person intended to die'. Hence in order to prevent suicides, the priority should be proper management of suicide attempts. As per WHO, the annual prevalence of suicide attempts is 4 per 1000 in low/low-middle income countries like India. [2] For every completed suicide, there are more than twenty attempts. Due to scarce help seeking and healthcare resources in India, a general hospital emergency service is usually the first point of treatment contact. This underlines the importance of this narrative review wherein the literature related to emergency assessment and management of suicide attempts mainly in the Indian context has been reviewed.

Epidemiology

Though there is no centralized 'suicide attempt' registry in India, yet hospital-based studies have described them from 1965 onwards. Table I illustrates the studies regarding suicidal attempts presenting to the emergency services in India.[3-15] The largest of such studies was retrospective evaluation of patients attending behavioral emergency in Emergency Management Service - 108 in the states of Gujarat and Andhra Pradesh (covering upto 15% of Indian population). Out of a total of 40,541 behavioral emergencies, 91% were suicidal attempts, of which 60.5% were of poisoning.[8] These were highest in the age-group 20-30 years (42.2%), lower socio-economic background (93%), rural areas (74.3%) and among backward castes (42.6%). In the WHO multisite randomized clinical trial on suicidal attempts to evaluate the management of patients presenting to emergency services in primary-care,[6] in Chennai centre 54% of the females were married whereas among males 47% were married. The attempters were mostly employed and the method commonly used was poisoning.

Literature has considered the common risk factors for completed suicide,

attempts and non-suicidal behavior to lie on a spectrum. The risk factors for suicidality as per WHO Suicide Report 2014 are previous suicide attempt, mental disorders, harmful alcohol use, job/financial loss, hopelessness, chronic pain, physical diseases and family history of suicide (see table 1). [2] Other risk factors are poor social support, relationship conflict or loss. At the community level, trauma due to discrimination, acculturation, disaster, conflict, access to means and stigma are important. Among protective factors, strong personal relationships, religious-spiritual beliefs and positive coping strategies play an important role. [16] Often in a clinical scenario, an individual has multiple risk factors acting synergistically - for example in case-vignette A, two risk factors 'cancer and depression' increased suicidal risk much more than individually.

Table 1: Studies* related to suicide attempts presenting to emergency services in India

Author	Sample Size	Important Findings
Jain et al (1999)[3]	56	Psychiatric illness in 57 %, 37.5% had a diagnosis of depression, 39.28% - mild to moderate suicidal intent, 16% high score on the hopelessness variable, common methods - poisoning (organophosphorus & drug over dose).
Kumar et al (2000) [4]	203	Compared risk factors between adolescents and adults, adolescents had significantly higher levels of depression, hopelessness, lethality of event & stressful life events.
Srivastava et al[5] (2004)	137	Unemployment, presence of a stressful life event in the last six months, suffering from physical disorders and having idiopathic pain.
Fleischmann et al[6] (2005) (WHO-SUPRE-MISS study)	680	51% females, 49% males, majority of attempters employed and educated up to secondary education, self-poisoning (69- 98%) most common method of attempt.
Nagendra Gouda [7] et al (2008)	540	Majority 15-29 years of age, 61.3% males, 38.7% females, 52.2% educated below or up to matriculation & 83% lower socio-economic groups. Common mode was by organo-phosphorus compounds (66.3%), over dosage of tablets (17.8%). Common cause was family problem (27.2%) and illness (27%).
Saddichha et al[8] (2010)	40,541	Majority 20 - 30 years of age, poor socio-economic background, rural area and backward caste. Most common mode - poisoning (60.5%).

Saddichha et al[9] (2010)	1007	Male preponderance, majority of study population - 15-44 years of age, housewives and daily wage laborers. Most common mode in males: hanging and insecticide; in females: self-immolation & insecticide; Hanging and insecticide were most common methods used (72%); Self-immolation and insecticide poisoning had the highest mortality.
Sisask et al (2010)[10]	2819	Religiosity is not a protective factor for attempted suicide in Indian settings.
Grover et al (2016)[11]	132	Male: female - 1.28:1, at least one psychiatric diagnosis was present in 41.7%, impulsive suicide attempt was present in 40 .2% of the sample, depression & substance use disorders were most common. Those with psychiatric diagnosis- more likely to be older, males, married, have higher suicidal intent, more planned attempts & higher depressive symptoms as compared to those who did not have a psychiatric disorder.
Grover et al (2016)[12]	109	Compared to healthy controls, those with self-harm (irrespective of presence or absence of psychiatric diagnosis) less often used positive religious coping and more often used negative religious coping.
Pattanayak (2016)[13]	69	Mean age - 25.3 (7.4) years; 48 (70%) were women, majority did not have a prior psychiatric diagnosis Majority 38 (55%) had presented with ingestion of toilet cleaners. Almost all the incidents were preceded by conflicts such as an argument with family members or failure in an examination or a failed relationship
Jegaraj (2016)[14]	1228	Mean age 20 (±11) years, slight female predominance (51.8%). Women preferred plant poisons, corrosives and tablet overdosing while men preferred agricultural chemicals.
Benjamin (2018)[15]	341	Mean age of study population 27.3 ± 8.9 years, poisoning (91.7%) - most common method used followed by hanging (7.3%) and self-injury (0.3%)

*This is not an exhaustive enumeration (only studies in PubMed included journals have been listed).

Though the above risk factors are true to any society and culture, there are certain important differences between the West and India (Table I). Unlike western countries, marriage is not always protective particularly for Indian women - this may be due to the psychosocial stressors related to marital life as in case-vignette C. In India, common modes of suicide are poisoning and drug overdosage followed by hanging and self-immolation (Table I).

As per the National Crime Records Bureau of India (2015), common causes of suicides were family problems and illnesses, accounting for 27.6% and 15.8% of suicides respectively. Other common causes were 'marriage related issues' (4.8%), 'bankruptcy' and 'love affairs' (3.3% each), 'drug abuse/alcohol addiction' (2.7%), 'failure in examination' and 'unemployment' (2.0% each), 'property dispute' (1.9%), 'poverty' (1.3%) and 'professional/ career problems' (1.2%).[17] Considering India to be a socio-centric society, social stressors are understandable to be important causes of suicide as in case-vignette C and D. Unlike the West, sexual abuse and illegitimate pregnancy are important causes of suicide among Indian women. Also, India being an agrarian economy, suicide related to pesticides and crop failures are important as in case-vignette B. Recently as in developed countries , portrayal of suicides and their details by media is being linked to suicides , particularly among adolescents due to modelling.

The question remains whether the above-mentioned characteristics are common risk factors for suicidality irrespective of ideation, attempt or completed suicide. Indian studies have shown that profile of attempters with high intent and lethality are similar to the completers. It has been proposed that the risk factors are unique for ideation versus attempt or completion as per ideation-to-action theories of suicide.[18] Irrespective of the theoretical background, all the risk factors should be considered for a comprehensive assessment.

Assessment

One needs to remember the ground situation in India - an overcrowded emergency room manned by a few or single non-specialist physician with very little support staff. Stigma and perception that these are deliberate self-made non-medical problems, and priorities for medical emergencies pose difficulties. It needs to be remembered that though suicide is a rare event, several landmark studies have predicted that with the current understanding it is not possible to accurately predict a completed suicide).[19] Suicide is not just a product of balancing between risk and protective factors as illustrated in Table I, but a complex multi-causal phenomenon involving biopsychosocial and cultural aspects. Understanding the individual as a whole is impractical in emergency by a non-specialist, who needs to focus upon other goals - preliminary assessment of medical status and management, ensuring safety and other issues (e.g. addressing severe anxiety in a suicidal patient). Under such circumstances, the emergency clinician needs to aim at medical stability. In a medically unstable patient, priority is resuscitation and maintaining vitals. If substance intoxication/withdrawal or medication overdose is suspected then

appropriate management with medications /anti-dote should be instituted (algorithm Figure I). Till the patient is in intoxication/severe withdrawal, a proper suicidal assessment may be deferred. After ensuring stability of vitals, detailed physical examination and relevant biochemical, hematological and toxicological investigations should be done.

Thereafter, as soon as the patient can communicate, suicidal risk assessment should be done. Patient should be shifted to a relatively calm place for assessment to maintain confidentiality. Clinician should be an empathic and active listener, allowing the patient to speak up the psychological issues. An attitudinal change among emergency clinicians about suicidal attempts is needed for such approach. Initially, close-ended questions need to be avoided and later current suicidal ideation/plans should be explored. It is a myth that direct questioning about suicide 'plants' such ideas in the mind of an individual. The mode of presentation to emergency may itself be an important indicator - patients with intact insight and low intent may themselves present whereas those with lack of insight or high intent to die may be brought by others. Obtaining collateral information is very important. Assessment can be challenging at times in guarded/uncooperative patients, in whom noting 'acute change in behaviour' is very important. For example, repeated requests for early discharge in an otherwise uncooperative patient may be a harbinger of suicidality.

With a little time and attention, even a non-specialist can assess a suicidal person. The details of the attempt should be noted like precipitants, preceding and surrounding events, intent, lethality, consequences and use of any intoxicants, etc. It is also important to determine the patient's thoughts about the attempt, perceived dangerousness of the means and any protective factors in the form of social and family cohesion. A brief temperamental assessment - at least interpersonal issues, high-risk behaviours and mood instability should be assessed. Comorbid psychiatric and medical history, family history of suicide or mental illness and access to means (e.g. pesticides) should be assessed. If significant risk factors are present, then caution should be exercised, hospitalization should be planned, and all these should be documented carefully. In emergency room, scales like SADPERSONS and Columbia Suicide Severity Rating Scale may be used for assessment, but these are not substitute for a clinical evaluation.[20] Considering time constraints in a busy emergency, American Association of Suicidology has come up with strategy acronym **'IS PATH WARM'** (Box 1):

A specialist, if available, may focus upon psychosocial issues like polarized thinking, interpersonal dynamics, belief systems, ambivalence

towards death, past experiences influencing future decision making, spiritual and religious coping, and viewpoints about life.

Box 1:**Acronym from American Association of Suicidology for assessing suicide:**

'IS PATHWARM'	
I	Ideation
S	Substance use
P	Purposelessness
A	Anxiety
T	Trapped
H	Hopelessness
W	Withdrawal
A	Anger
R	Restlessness
M	Mood Change

Based on risk assessment, decision regarding continuing hospitalization should be taken (Table 2). In the presence of a significant suicidal attempt or plans and other indications (Table 2), admission in a mental health setting should be planned. Suicide risk assessment is an ongoing phenomenon - if the non-specialist is unable to assess suicidal risk then it is better to hospitalize, general principle being 'to err in the direction of caution'.

Interventions

Under no circumstances should the patient be left alone because though suicide is rare in hospitals yet it has been reported. An acutely agitated patient with severe anxiety should be sedated with benzodiazepines, if no contraindications exist. The intoxicants may be part of the plan or an act of impulsivity as in the case-vignette D. If a patient is severely agitated and aggressive due to psychosis /intoxication with a risk of harm to self or others, safety should be priority.[21] In such cases, if verbal de-escalation and parenteral medications are not helpful, physical restraints can be applied as a last resort for the least possible duration and with minimum possible physical exertion by the patient as per standard norms and available facilities (e.g. frequent monitoring).

In a high risk hospitalized patient, ECT (electroconvulsive therapy), antipsychotics, antidepressants, lithium, etc. should be started as per underlying condition. Mouth-dispersible tablets may be used for uncooperative patients with 'cheeking' of medications. Recent double-blind RCTs and meta-analysis

Table 2: Common indications for admission after an attempted suicide in Indian context (as per different standard guidelines, Indian studies and consensus among authors):

1.	Persistent plans / thoughts of suicide in the current attempt.
2.	History of high intent in the current attempt/ past attempts.
3.	Violent attempt/ high lethality in the current attempt / past attempts.
4.	Suicidal ideation in the presence of other risk factors like mental illness, ongoing stressors (debts of financial loans, exam stressors, domestic violence, etc.).
5.	Family history of suicide.
6.	Long standing mental illness with multiple attempts.
7.	Severe mental illness, florid psychotic symptoms and difficulty by family members to manage the patient.
8.	Poor social support, lack of stable living conditions and difficult to access the emergency if needed.
9.	Elderly male with new onset of psychiatric illness with psychotic symptoms.
10.	Severe agitation, distress due to poor judgment and refusal of help or regrets of surviving.
11.	Unstable medical or surgical conditions which need proper assessment and management
12.	Publicized suicide of a celebrity or politician, or close peer group among adolescents serving as a trigger in the locality of the attempter.

have shown efficacy of intravenous ketamine in sub-anesthetic dosage (0.1-0.5mg/kg) causing quick remission (within hours) of suicidal ideation and depression. Even single use of ketamine in emergency settings has been shown to have efficacy and has opened up new avenues of suicide management.[22] However, concerns remain regarding its addictive and other side-effects, and till date ECT is the most effective treatment for the immediate management of high suicidal risk with severe depression/psychosis.

Pharmacological therapy should not overshadow non-pharmacological modes. Structured psychological interventions are irrelevant for non-specialists, but basic crisis handling skills like empathizing, patient listening, helping to vent-out emotions and persuading to delay major decisions may be provided by them. However, excessive persuasion may be counterproductive and can hamper therapeutic alliance. Involving family members/significant others and educating about common safety measures (e.g. to keep away any sharps, medications, poisons) should be an integral part of management. In Indian settings, patients/family members have their own explanatory models and any discussion should be adjusted according to cultural beliefs. Recent decriminalization of suicide is hoped to reduce stigma and encourage family members' involvement. No harm contracts often used are unreliable (a quick agreement may be an expression of overt suicidality) with poor evidence.[23]

If high risks are not found then the patient after an adequate period of observation may be discharged. The time limit for this observation depends upon the suicidal risk and clinical judgment. However, it needs to be kept in mind that the post-discharge suicidal rate is quite high - hence the clinician should plan long term care from emergency itself. In the SUPRE-MISS Chennai cohort,[6] the patients were followed up till 18 months with brief intervention and contact, which showed a decrease in suicide rate.[24] This is relevant in Indian context because of the fact that with improvement in telecommunications, such interventions can be developed at low cost. Involving family members and continued care with help of local health workers (e.g. Anganwadi, ASHA, outreach workers, etc.) should be done. For patients with poor social support, religious/ social service organizations should be involved.

Special groups

Suicidal attempts are relatively higher among the adolescents and youths with recent studies showing that suicide is the commonest cause of death in this group in India.[1] Psychosocial issues (e.g. early marriages, love failures and exam stress), changing socio-economic scenario, substance use, role of media (e.g. in copy-cat suicides) and child abuse including cyber-bullying are widely responsible. In children and adolescents, lethality may not be a reliable indicator as they may misjudge lethality of means. Self-report of children and adolescents needs to be seen in perspective of age, developmental level, and reaction of parents and health professionals to the attempt.[25] Although SSRIs can rarely exacerbate suicidal ideations in some adolescents, the overall evidence suggests that benefits considerably outweigh the risks. It is imperative to assess possibility of any kind of abuse or neglect.

Another peak of suicidality occurs in the elderly particularly after 75 years. In an Indian study, compared to younger adults, elderly suicide attempters had a higher rate of past and family history of psychiatric illness, concurrent medical illness and history of medical contact in the last three months.[26] Elderly have twice the risk of dying after an attempt than the young, and hence the emergency clinicians should be careful. In traditional Indian family, elderly are more integrated with the society rather than in the West. Hence though overall rates are low currently in India, these may increase in future.

Medico-legal issues

As per section 115 of the Mental Healthcare Act (MHCA), 2017, “any person who attempts to commit suicide shall be presumed, unless proved

otherwise, to have severe stress and shall not be tried and punished." Section 18 in Chapter V mandates that basic and emergency mental healthcare services should be available at all community health centres and upwards funded by Government and it should be at par with care for physical illnesses. Emergency care can be immediately started by any medical practitioner with consent from a nominated representative. Within 72 hours, however, such a patient should be assessed in a mental health establishment. MHCA prohibits use of ECT in emergency without admission and in minors (<18 years) without permission of review board. Often the individual with a suicidal attempt is reluctant to seek help - unfortunately there is no provision of home-based care in neither MHCA nor National Mental Health Policy.

Future directions

For management of suicidal attempt in emergency, there is a lack of guidelines in India. Hence it is proposed to use algorithm primarily based on World Health Organization-Mental Health GAP (WHO-mhGAP) intervention guide, Indian research and experience in working in such scenarios where in Figure 1.[27]There is need for developing acceptable, feasible, cost-effective and culturally tailored interventions based on empirical evidence. In future, the focus of intervention programs should shift from treatment of suicide attempters to prevention of suicide attempts. This requires establishing an effective suicide registry and suicide call-lines. Suicidology research would see a lot of advances in future with the introduction of ecological momentary assessment, big data approaches and social networking analysis. Clinically, at the individual level, an empathic approach for a comprehensive suicidal risk evaluation, establishing therapeutic alliance, a cautious approach for risk stratification and involvement of family for both long- and short-term care will remain the gold-standard.

Conclusion

Suicidal attempt is a public health problem as it is the strongest predictor of suicide. Comorbid medical and psychiatric illnesses, past suicidal attempt, family history, substance use, psychosocial stressors, temperamental instability, availability of means and poor social support are known risk factors. After initial medical management, a comprehensive suicidal risk assessment may be done by any medical practitioner in the emergency followed by evaluation by a specialist. All high-risk patients should be hospitalized preferably in a psychiatric setting. Low risk patients may be discharged only if adequate social support is available for future follow-up and continued care. With available understanding, suicide can never be predicted with absolute accuracy,

and hence, it is better to err on the side of hospitalization. Involvement of family members/ significant others in both immediate and long-term management should be advised.

References

1. India State-Level Disease Burden Initiative Suicide Collaborators. Gender differentials and state variations in suicide deaths in India: the Global Burden of Disease Study 1990-2016. Lancet Public Health 2018;3:e478-89.
2. Bertolote JM, Fleischmann A. Suicide and psychiatric diagnosis: a worldwide perspective. World Psychiatry 2002; 1:181-5.
3. Jain V, Singh H, Gupta SC, Kumar S. A study of hopelessness, suicidal intent and depression in cases of attempted suicide. Indian J Psychiatry 1999; 41:122- 30.
4. Kumar CT, Chandrasekaran R. A study of psychosocial and clinical factors associated with adolescent suicide attempts. Indian J Psychiatry 2000; 42:237-42.
5. Srivastava MK, Sahoo RN, Ghotekar LH, Dutta S, Danabalan M, Dutta TK, et al. Risk factors associated with attempted suicide: A case control study. Indian J Psychiatry 2004; 46:33- 8.
6. Fleischmann A, Bertolote JM, De Leo D, Botega N, Phillips M, Sisask M, et al. Characteristics of attempted suicides seen in emergency-care settings of general hospitals in eight low- and middle-income countries. Psychol Med 2005; 35:1467-74.
7. Nagendra Gouda M, Rao SM. Factors related to attempted suicide in Davanagere. Indian J Community Med 2008; 33:15- 8.
8. Saddichha S, Vibha P, Saxena MK, Methuku M. Behavioral emergencies in India: a population based epidemiological study. Soc Psychiatry Psychiatr Epidemiol 2010; 45:589- 93.
9. Saddichha S, Prasad MNV, Saxena MK. Attempted suicides in India: a comprehensive look. Arch Suicide Res 2010; 14(1):56- 65.
10. Sisask M, VarnikA, Kolves K, Bertolote JM, Bolhari J, Botega NJ, et al. Is religiosity a protective factor against attempted suicide: a cross-cultural case-control study. Arch Suicide Res 2010; 14:44- 55.
11. Grover S, Sarkar S, Bhalla A, Chakrabarti S, Avasthi A. Religious coping

among self-harm attempters brought to emergency setting in India. Asian J Psychiatry 2016; 23:78- 86.

12. Grover S, Sarkar S, Bhalla A, Chakrabarti S, Avasthi A. Demographic, clinical and psychological characteristics of patients with self-harm behaviours attending an emergency department of a tertiary care hospital. Asian J Psychiatry 2016; 20:3- 10.
13. Pattanayak RD, Kumar S, Khandelwal SK. Self-harm attempts with corrosive "acid" among patients referred to psychiatric emergency services: Observations and implications. Natl Med J India 2016; 29:182-3.
14. Jegaraj MKA, Mitra S, Kumar S, Selva B, Pushparaj M, Yadav B, et al. Profile of deliberate self-harm patients presenting to Emergency Department: A retrospective study. J Fam Med Prim Care 2016; 5:73- 6.
15. Benjamin RN, David T, Iyadurai R, Jacob KS. Suicidal nonorgano-phosphate poisoning in a tertiary hospital in south India: Nature, prevalence, risk factors. Indian J Psychol Med 2018; 40:47- 51.
16. Thimmaiah R, Poreddi V, Ramu R, Selvi S, Math SB. Influence of Religion on Attitude Towards Suicide: An Indian Perspective. J Relig Health 2016; 55:2039- 52.
17. National Crime Records Bureau - Google Search [Internet]. (Available from: https://www.google.com/search?q=national+crime+records+bureau&ie=utf-8&oe=utf-8&client=firefox-b-ab (last accessed Mar 30, 2019)
18. Klonsky ED, Qiu T, Saffer BY Recent advances in differentiating suicide attempters from suicide ideators. Curr Opin Psychiatry 2017; 30:15- 20.
19. Pokorny AD. Prediction of suicide in psychiatric patients. Report of a prospective study. Arch Gen Psychiatry 1983; 40:249-57.
20. Mullinax S, Chalmers CE, Brennan J, Vilke GM, Nordstrom K, Wilson MP. Suicide screening scales may not adequately predict disposition of suicidal patients from the emergency department. Am J Emerg Med 2018; 36:1779-83.
21. Ronquillo L, Minassian A, Vilke GM, Wilson MP. Literature-based recommendations for suicide assessment in the emergency department: a review. J Emerg Med 2012;43:836-42.
22. Wilkinson ST, Ballard ED, Bloch MH, Mathew SJ, Murrough JW, Feder

A, et al. The effect of a single dose of intravenous ketamine on suicidal ideation: a systematic review and individual participant data meta-analysis. Am J Psychiatry 2018;175:150- 8.

23. Stanford EJ, Goetz RR, Bloom JD. The No Harm Contract in the emergency assessment of suicidal risk. J Clin Psychiatry 1994;55:344-8.

24. FleischmannA, Bertolote JM, Wasserman D, De Leo D, Bolhari J, Botega NJ, et al. Effectiveness of brief intervention and contact for suicide attempters: a randomized controlled trial in five countries. Bull World Health Organ 2008;86:703-9.

25. Soole R, Kolves K, De Leo D. Suicide in Children: A Systematic Review. Arch Suicide Res 2015;19:285- 304.

26. Suresh Kumar PN, Anish PK, George B. Risk factors for suicide in elderly in comparison to younger age groups. Indian J Psychiatry 2015; 57(3):249-54.

27. WHO | mhGAP Intervention Guide for mental, neurological and substance use disorders in non-specialized health settings [Internet]. WHO (Available from: http:// www. who. int /mental_health/publications/mhGAP_intervention_guide/en/ (last accessed Mar 30, 2019)

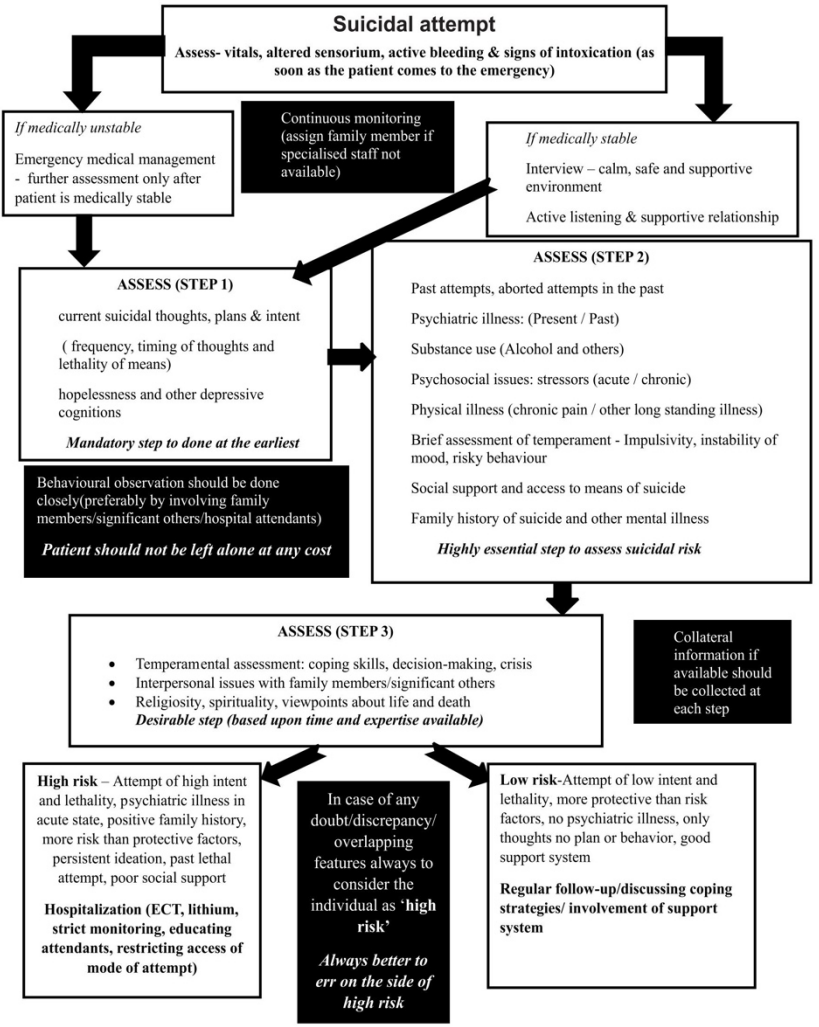

Fig. 1: Algorithm for the evaluation and intervention for the patient presenting with suicidal ideation/atttempt (as per different standard guidelines, Indian studies and modified based realities of Indian emergency settings)

Chapter6

Assessment and Management of Unexplained Medical Symptoms

Pallavi Rajhans, Mamta Sood
Department of Psychiatry, All India Institute of Medical Sciences, New Delhi -110029

Abstract

Unexplained medical symptoms (UMS) are commonly encountered in clinical settings and often go unnoticed. Their assessment, diagnosis and management remain a challenge. Various factors lead to their development like personality factors, underlying stressors, social and psychological factors, genetic factors, neuro physiological factors, etc. Assessment and management of UMS requires adoption of a patient centered approach. Effective communication helps in development of rapport and better understanding of the problem. Detailed history, physical examination and mental state examination is recommended to rule out underlying physical cause for the symptoms and psychiatric co-morbidities including anxiety, depression and substance use. A variety of screening and diagnostic instruments are available for assessment. Management primarily includes development of good therapeutic alliance and providing reassurance. Factors maintaining or predisposing to the symptoms must be addressed. Focus of management should be on decreasing the distress and improving functioning rather than on complete removal of symptoms. Pharmacological and non-pharmacological management should be tailored to patients' needs and problems. Repeated consultations and investigations should be avoided.

Introduction

Unexplained medical symptoms (UMS) are common presentations encountered in clinical practice in the primary care as well as in specialists' settings. UMS have been defined in a variety of ways; the most commonly accepted definition is, presence of set of symptoms for which no accurate cause can be determined, despite obtaining a detailed history, physical examination and laboratory investigations.[1] In primary health care settings, for about 25-50% symptoms, no evidence for underlying physical disease can

be found. The percentages rise higher in specialist settings ranging from 30-70%.[2] Out of all consultations made to general practitioners, about 25- 50% visits are for UMS.[3] These are most commonly seen in females of middle age, those who have previously experienced anxiety or depression and in those who recently suffered from a physical illness. Female gender may predict chronicity, and the presence of depression and not the previous history of UMS has been found to be predictor of UMS in general population.[4]

UMS can present alone or be associated with medical, psychiatric and substance use disorders. Various specialties have separate diagnostic category for UMS, like fibromyalgia in rheumatology and irritable bowel syndrome (IBS) in gastroenterology.[5] The term somatoform has been used to indicate the presence of an underlying psychological distress which transforms into physical somatic symptoms. General practitioners and primary health care researchers have often used the term UMS, as it does not emphasize on the underlying psychological distress.[6] UMS may frequently change over time and it can be difficult to measure them objectively, for example, the complaints of persistent fatigue, headache or abdominal pain.[7] UMS have been described under the category of somatoform disorders in International Classification of Diseases – 10th Revision (ICD-10) and as somatic symptom disorders in Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM- 5). Earlier, presence of UMS was given emphasis in establishing diagnosis of somatoform disorder which has now been removed in DSM-5 as well as the proposed ICD 11. The role of disproportionate thoughts and feelings as an integral part of diagnosis of somatic symptom disorder is now emphasized in DSM-5.[8] Psychological distress, psychiatric disorders, health anxiety, and personality traits like high levels of neuroticism may all be associated with making the diagnosis and management difficult and complicated.[9]

It is important to assess and manage UMS, as great proportion of cases approach primary as well as specialist services and often these symptoms go unnoticed. These symptoms may not be associated with dramatic structural or functional changes. However, the significant associated distress needs to be relieved. The therapist needs to offer some underlying explanation for the symptoms for an effective control and management, since ambiguity may interfere in long-term positive outcome.[7]

Assessing a patient with unexplained medical symptoms

UMS are troubling for the patient as well as for the treating doctor. Patients may approach other clinicians with a desire that their symptoms get recognized, but repeated investigations on the other hand may lead to iatrogenic damage or trauma further adding to the distress. However, it is also important to

consider the possibility of underlying physical illness which should not be ignored. Psychiatric co-morbidities like anxiety, depression and substance use are commonly associated with UMS and should always be looked for. It is also important to explore associated stressors and psycho-social issues.[5]

Effective communication and explanation

In patients with UMS, the clinician may face an incongruence at various levels like at the epistemological level or illness conceptual level.[10] In order to overcome these disparities, a causal explanation is necessary for adequate management of patient. When there is no such explanation, the therapeutic relationship becomes the lifeline for patients. It is also important that the explanatory models should not just focus on giving a medical explanation but should also focus on the patient's illness perspectives.[10] By the time patients reach clinicians, they have already formed an explanatory model of their symptoms based on their social circumstances and biomedical understanding.[6] Colluding or rejecting explanations tend to hinder the treatment whereas empowering explanation given by the clinician not only strengthens the therapeutic relationship, but also aids in improving resilience. Normalising responses with an adequate explanation are perceived to be more useful by patients as their concerns are not undermined, and this can even bring forward any underlying distress which the patient is going through.

The key aims of an effective communication include obtaining information about the reason for visit, primary concerns of the patient and understanding the patient as a whole with their emotional and psycho-social attributes.[11] It is important to carefully listen to the patient's complaints and communicate properly. The patient then feels assured which helps in development of good rapport. An effective communication focuses on the concerns of the patient, acknowledges them and helps in promotion of patient's health and development of good doctor patient relationship.[11,12] Derogatory and critical remarks must be avoided.

Detailed history

A detailed history elaborating upon information about the onset of complaints, their exact nature, aggravating and relieving factors, and associated distress and dysfunction is to be taken. One needs to ask for symptoms suggesting underlying physical disorder or any co-morbid psychiatric disorder. Depressive and anxiety symptoms are quite common. It is important to take a detailed account of past history of similar complaints and how they were relieved. Information about persisting psycho-social stressors in various domains like financial, family and relationship problems, etc. must be obtained.

History of childhood abuse and environmental stressors should be obtained. History of similar complaints in family members may point towards genetic transmission.[6]Details about substance use and personality issues should also be taken. Information about patient's illness beliefs and perceptions should be obtained. It is important to ask for collateral information about symptoms and associated disability.[13]

Physical examination and laboratory investigations

Detailed physical examination is essential, as there may be an underlying pathology for the symptoms that might have been missed. Patients with UMS usually carry results of multiple investigations conducted previously. It is useful to review all the old laboratory investigation reports. In case of any doubt about an underlying pathology, only the required investigations should be done and specialist opinion taken if necessary. Appropriate investigations should not be delayed due to the unnecessary concern about somatization.[14]

Mental state examination

Mental state examination forms an important part of the assessment process as clinician gets an opportunity to explore for psychological attributes. One must look for any mood and thought disturbances and explore for perceptual abnormalities and cognitive deficits, and assess the patient's attitude towards the complaints and illness beliefs.

Instruments

The diagnosis is usually based on the presenting history and physical and mental status examination. However, there are scales and instruments which can be used for screening and diagnosis. The Primary Care Evaluation of Mental Disorders (PRIME -MD) is a short structured diagnostic instrument which was developed and validated to diagnose somatoform disorders along with depressive, anxiety, alcohol and eating disorders.[15] First, the patients complete a 27 item screening instrument by responding yes or no and then for those who screen positive, additional questions are asked using structured interview guide. A self-administered version of the PRIME-MD called the Patient Health Questionnaire (PHQ) can also be used which requires less time for administration. Various versions are available, but PHQ-15 is specifically used to find the presence of somatoform disorders and assessing symptom severity.[5,11-13] Scale for Assessment of Somatic Symptoms (SASS) assesses somatization and somatic symptoms in psychiatric patients as well as in those with a medical disorder. It can even help in differentiating if the physical symptoms are idiopathic, organic, psychological or both.[16]

Differential diagnosis

Physical illness may be an underlying cause of UMS. It must be ruled out by detailed history, thorough physical examination and appropriate investigations and referral to specialist if required. In illness anxiety disorder (DSM 5) or hypochondriac disorder (ICD-10), the patient has fear of having a disease. In UMS, the concern is about the symptoms. In functional neurological symptom disorder (DSM 5) or conversion disorder (ICD 10), the presence of a stressor, secondary gain, lack of concern for the symptoms and presence of acute and transient symptoms can be differentiating. Psychiatric disorders may be co-morbid or the cause for unexplained symptoms either by being an attribute or accompaniment. It is important to assess for anxiety and depressive symptoms, substance use and personality disorders or traits. Somatic delusions and other delusional beliefs can be differentiated from somatic symptom disorder by the intensity of delusional belief which is often idiosyncratic.

Management

Patient centered approach is emphasized in the management of UMS. Three management strategies have been highlighted.[17] In the re-attribution approach, the clinician focusses on the link between symptoms and life stressors. It is useful for those patients who are able to understand these explanations and have short duration of illness. Directive approach is more useful in patients who fail to acknowledge the role of underlying stressors. They are treated using the medical model as if they have a physical problem. Psychodynamic approach focuses on development of therapeutic alliance and is useful in persistent somatic symptoms.

The predisposing, precipitating and perpetuating factor model considers that these three types of factors either initiate or maintain UMS.[18] Factors that predispose to UMS like childhood maltreatment and low social support, factors which precipitate UMS like psychiatric disorder, changes in support system or role, and routine psychosocial stressors, and factors which perpetuate UMS like social isolation need to be explored. An assessment of all these variables can act as an intervention for UMS by decreasing the power of predisposing factors, avoiding new precipitating factors and restricting perpetuating factors.

Management of UMS entails use of both pharmacological and non-pharmacological methods. Unnecessary investigations, medications or hospital admission should be avoided.

Reattribution

Reattribution is one of the commonly used models. It consists of four stages. [6]

- First stage focusses on assessment and supportive listening, obtaining detailed history and carrying out physical examination in a focused manner. This stage is primarily concerned with 'being understood'. It is very important to develop a therapeutic alliance with the patient.
- In second stage, feedback is given, and concerns are acknowledged. This stage gives an opportunity to the therapist to pick up cues indicative of underlying distress.
- Normalization approach of linking symptoms to psychosocial problems is targeted in third stage. Focus should be on improving functioning and decreasing distress rather than complete removal of symptoms. It should be clearly negotiated with the patient that unnecessary laboratory tests and frequent visits to different hospitals and physicians need to be curtailed with assurance that tests if required would be advised. Scheduling regular follow up visits not only helps in developing alliance but also prevents the patient from developing new symptoms as a ticket to visit new physician.[5,11-13]
- Fourth stage is about preparing a plan of management and negotiating the goals of treatment with patient. Reattribution model is effective, feasible and acceptable in routine primary care.[19]

Pharmacological management

Neurobiological studies have shown that dysfunction of serotonergic and noradrenergic systems may play a role in somatic symptoms in psychiatric disorders.[20] Pharmacological management with antidepressants has been found to be effective.[21] Trazodone has been found to be effective in non-coronary chest pain unrelated to gastro esophageal reflux disease.[22] Tricyclic antidepressants have a role in abdominal pain associated with irritable bowel syndrome.[22] Similarly, bupropion may be useful in neuropathic pain and venlafaxine in chronic pain. Duloxetine may be useful in fibromyalgia. However, there is lack of enough evidence for superiority of one class of antidepressants over another.[23] One can choose between selective serotonin reuptake inhibitors, tricyclics or other antidepressants, but the side effect profile must be considered as side effects can enhance the symptom perception. Low dose antidepressants can help in relieving pain and insomnia. As co morbidities including anxiety and depression are common, adequate management of these

psychiatric disorders helps in relieving the UMS as well. Polypharmacy should be avoided.

Non-pharmacological management

In the management of UMS, various psychological interventions like cognitive behavior therapy (CBT), psychodynamic psychotherapy and family therapy have been used. CBT includes relaxation techniques, inclusion of pleasurable and meaningful activities, working on the symptom associated catastrophic beliefs and cognitive restructuring to deal with dysfunctional beliefs.[24,25] Sessions usually range from four to sixteen, and can be conducted weekly over a period of three months. Psychodynamic psychotherapy is a less cost-effective approach which focuses on working on the unresolved unconscious conflicts which lead to expression of UMS.

Resuming the activities given up due to UMS should be encouraged. Focus should not be on restriction of activities. It is important to encourage the patients to have a healthy lifestyle and involve themselves in pleasurable activities. However, there is paucity of literature on effectiveness of problem-solving therapy or interpersonal therapy.

Conclusion

UMS are common in clinical practice and can present either alone or be associated with medical, psychiatric and substance use disorders. It is important to assess and manage UMS as often these symptoms go unnoticed. A patient centred approach is important for assessment and management. The diagnosis is usually based on the presenting history, physical and mental status examination and occasionally relevant investigations. Pharmacological and non-pharmacological methods are used for management of UMS. Careful listening to patients' complaints, performing physical examination to rule out underlying physical cause, regular scheduled appointments, reassurance and lifestyle modifications can help in improving the symptoms and functioning of patients.

References

1. Natelson BH. Medically unexplained symptoms. Encyclopedia of Behavioral Medicine 2013:1214-5.
2. van Ravenzwaaij J, Olde Hartman TC, Vcm Ravesteijn H, Eveleigh R, Van Rijswijk E, Lucassen PL. Explanatory models of medically unexplained symptoms: a qualitative analysis of the literature. Ment Health FamMed 2010;7:223.
3. Verhaak PF, Meijer SA, Visser AP, Wolters G. Persistent presentation of

medically unexplained symptoms in general practice. Fam Pract 2006; 23:414-20.

4. Leiknes KA, Finset A, Mourn T, Sandanger I. Course and predictors of medically unexplained pain symptoms in the general population. JPsychosom Res 2007;62:119-28.

5. Hatcher S, Arroll B. Assessment and management of medically unexplained symptoms. BMJ 2008;336:1124-8.

6. Guthrie E. Medically unexplained symptoms in primary care. Adv Psychiatric Treat 2008;14:432-40.

7. Kirmayer LJ, Groleau D, Looper KJ, Dao MD. Explaining medically unexplained symptoms. Can J Psychiatry 2004;49:663-72.

8. Dimsdale JE, Creed F, Escobar J, Sharpe M, Wulsin L, Barsky A, Lee S, Irwin MR, Levenson J. Somatic symptom disorder: an important change in DSM. J Psychosom Res 2013;75:223-8.

9. Menon V, Shanmuganathan B, Thamizh JS, Arun AB, Kuppili PP, Sarkar S. Personality traits such as neuroticism and disability predict psychological distress in medically unexplained symptoms: A three year experience from a single centre. Personal Ment Health 2018;12:145-54.

10. Johansen ML, Risor MB. What is the problem with medically unexplained symptoms for GPs? A meta-synthesis of qualitative studies. Patient Educ Counsel 2017;100:647-54.

11. Morriss R, Gask L. Assessment and immediate management of patients with medically unexplained symptoms in primary care. Psychiatry. 2009; 8:179-83.

12. Rosendal M, Olesen F, Fink P. Management of medically unexplained symptoms. BMJ 2005;330:4-5.

13. Richardson RD, Engel Jr CC. Evaluation and management of medically unexplained physical symptoms. Neurologist 2004;10:18-30.

14. Burton C. Can we explain medically unexplained symptoms? Fam Pract 2014;31:623-4.

15. Loerch B, Szegedi A, Kohnen R, Benkert O. The primary care evaluation of mental disorders (PRIME-MD), German version: a comparison with the CIDI. J Psychiat Res 2000;34:211-20.

16. Desai G, Chaturvedi SK, Dahale A, Marimuthu P. On somatic symptoms measurement: The Scale for Assessment of Somatic Symptoms Revisited. Indian J Psychol Med 2015; 37:17.

17. Kallivayalil RA, Punnoose VP. Understanding and managing somatoform disorders: Making sense of non-sense. Indian J Psychiatry. 2010; 52:S240.

18. Edwards TM, Stern A, Clarke DD, Ivbijaro G, Kasney LM. The treatment of patients with medically unexplained symptoms in primary care: a review of the literature. Ment Health Fam Med 2010;7:209.

19. Morriss R, Dowrick C, Salmon P, Peters S, Rogers A, Dunn G, et al. Turning theory into practice: rationale, feasibility and external validity of an exploratory randomized controlled trial of training family practitioners in reattribution to manage patients with medically unexplained symptoms (the MUST). Gen Hosp Psychiatry 2006;28:343-51.

20. Liu Y, Zhao J, Fan X, Guo W Dysfunction in serotonergic and noradrenergic systems and somatic symptoms in psychiatric disorders. Front Psychiatry 2019;10:286.

21. O'Malley PG, Jackson JL, Santoro J, Tomkins G, Balden E, Kroenke K. Antidepressant therapy for unexplained symptoms and symptom syndromes. J Fam Pract 1999;48:980-90.

22. Bixquert-Jimenez M, Bixquert-Pla L. Antidepressant therapy in functional gastrointestinal disorders. Gastroenterol Hepatol 2005; 28:485-92.

23. Kleinstauber M, Witthoft M, Steffanowski A, Van Marwijk HW, Hiller W, Lambert MJ. Pharmacological interventions for somatoform disorders in adults, a Cochrane systematic review. J Psychosom Res 2015;6:606-7.

24. Menon V, Rajan TM, Kuppili PP, Sarkar S. Cognitive behavior therapy for medically unexplained symptoms: a systematic review and meta-analysis of published controlled trials. IndianJ Psychol Med 2017;39:399.

25. Sharma MP, Manjula M. Behavioural and psychological management of somatic symptom disorders: an overview. Int Rev Psychiatry 2013; 25:116-24.

Chapter7

Managing Stress in a General Hospital Setting

Nishtha Chawla, Raman Deep
Department of Psychiatry, All India Institute of Medical Sciences, New Delhi-110029

Abstract

Stress has an intricate, complex bi-directional relationship with medical illnesses. It has been linked to many physical illnesses across medicine and is *a contributor to psychological ill-health. Stress may have a direct causative relationship for some psychiatric disorders, specifically acute stress, adjustment and post-traumatic stress disorders, or may precipitate mild anxiety and depressive symptoms. Chronic stress may worsen the course and outcome of medical conditions and can adversely affect patient outcomes. Physicians must be trained to screen and recognize chronic stress and stress-related psychiatric disorders among at-risk patient groups. This chapter focuses on stress and mental health in general hospital settings, and gives an overview of stress management strategies and pharmacotherapies in medically ill patients.*

Background

Stress has been linked to many physical illnesses across medicine and is a contributor to psychological ill-health. Stress is also hypothesized to be a predisposing or perpetuating factor in certain psychiatric disorders, though evidence for a causative role remains controversial.

This chapter focuses on stress and mental health in the context of medical illnesses, and the strategies for management of stress in general hospitals. To begin with, we provide a brief overview of stress and its link to coping.

Prevalence of stress-related disorders in hospitalized patients

There is a high prevalence of psychiatric disorders in individuals with medical conditions which may be due to the shared etiological factors, medication-related psychiatric adverse effects or a host of other possible mediators linking medical and psychiatric illnesses.[1] Depression is twice as prevalent in medically ill inpatients as in general population.[2]

Elderly patients are particularly prone to developing stress-related

disorders.[3] An Asian study to measure stress-related conditions in the elderly visiting outpatient department reported the prevalence of depressive disorder to be 23.7%, anxiety disorder 6.4%, and current suicidality 20.4%. The study also reported significantly higher scores on scales measuring perceived stress, depression and neuroticism in geriatric outpatients than in general population of matched age.[4]

Stress and depression have also been studied in oncology patients. Breast cancer has been found to be associated with various emotional and psychological symptoms like insomnia, loss of appetite, suicidality, substance use and syndromal depression/anxiety. Around one-third females with breast cancer screened positive for psychological ill-health between pre-diagnostic and post-diagnostic assessment, similar to other cancer patient groups. Higher scores in post-diagnostic assessments were predicted by higher baseline scores, lack of social support, avoidance and personal responsibility.[5] However, contrary to the general notion of higher stress among cancer patients, a meta-analysis of 24 studies with 4007 patients concluded that the interview-based prevalence of anxiety and depression was lower in cancer patients. The prevalence did not vary between the patients in palliative or non-palliative care settings.[6]

If the visit to the hospital or admission in the ward is associated with an invasive procedure, it multiplies the amount of stress for an individual. It is thus important for a physician or surgeon to consider a patient's psychological state before he/she undergoes a major invasive procedure.

Impact of stress on medical conditions

Chronic stress is often associated with a variety of psychological and physical manifestations (cognitive, emotional, autonomic, somatic, behavioural, etc). In addition to milder anxiety and depressive states, seen in association with stressors especially in predisposed individuals, certain other disorders have been classified as stress-related and neurotic disorders viz. acute stress reaction, adjustment disorder, post-traumatic stress disorder (PTSD) and dissociative disorder.[7]

Stress may lead to prolonged hospitalisation, repeated hospitalisations, and worsening of physical illness leading to enhanced morbidity and mortality. The course of the illnesses such as cardiovascular diseases (hypertension, atherosclerosis) or metabolic diseases (diabetes) can be influenced by stress through several mechanisms.[8,9] For example, release of glucocorticoids, inflammatory pathways, vasopressin, norepinephrine, IL-6 and CRP predispose to development of hypertension and atherosclerosis. Glucocorticoids and

norepinephrine predispose to development of insulin resistance and metabolic disorders. Release of histamine also occurs during stress, which can lead to bronchoconstriction, thus precipitating asthma. Peptic ulcers can worsen due to greater acid secretion at the time of stress. There are studies which also suggest strong association of stress with development/ progression of cancer by suppression of natural killer cells, which prevent metastasis[8.9]

Screening and recognition of stress-related conditions in general hospital settings

Often it is difficult to detect mental disorders in patients with somatic illness, as there are overlapping symptoms. In addition, psychological symptoms also go unrecognised as the focus often remains on physical symptoms. Some patients may not even meet diagnostic criteria for stress-related disorders but may have sub-threshold symptoms or may screen positive for psychological ill-health, without being assigned a psychiatric diagnosis.

A routine screening of the in-patients in general hospital for anxiety and depression is ideal, but not pragmatic or logistically feasible. The first point of contact for a patient in general hospital may be social worker, a nurse, a medical trainee, or an internist. They can be trained to be sensitive to pick up stress or related conditions amongst patients admitted in wards or attending out-patient clinics. The referral rates to liaison psychiatrists remain low with several barriers.[10]

Screening should especially be done in:

- those diagnosed with severe, life-threatening illness
- those undergoing major surgery
- those with disabling conditions
- those who have experienced a stressor before hospitalization e.g. disaster, trauma, assault, death of a loved one, etc.
- those with prolonged hospitalization
- those with multiple co-existing medical and/or psychiatric morbidities
- those with psychosocial risk factors e.g. low social support, etc.

In clinical interview, certain cues may be observed by a sensitive, empathic physician as follows:

- verbal cues (e.g. referring to feelings, mentioning about depression/ anxiety, etc.)

- behavioural cues (e.g. agitation, restlessness, etc.) or postural cues (e.g. gaze, avoidance, dejected, tense etc.)

Expression of distress by a patient is also dependent upon a doctor's behaviour, for example, avoiding eye contact with the patient during interview may be a deterrent.

Use of brief, self-report screening tools may help in detection of at-risk patients in general medical settings or primary care. Several specific scales are available to screen particular groups (such as for post-partum women, etc). Few screening tools in common use are listed below:

- General Health Questionnaire (GHQ). The 12-ltem version (GHQ- 12) is the most extensively used screening instrument for common mental disorders, in addition to being a more general measure of psychological well-being) [11]
- Patient Health Questionnaire-depression module (PHQ-9). It is a 9-item scale, in which each item is rated between 0-3 based on frequency, with 88% sensitivity and specificity with a cut off score of 10. Its 2-item version (PHQ-2) inquires about the frequency of depressed mood and anhedonia over the past 2 weeks. [12]
- Distress Thermometer (DT) and Mood Thermometer (MT) with visual-analogue design are rapid screening tool for detection and monitoring of emotional disorders in cancer patients. [13]

Two depression screening tools specifically address the problem of transdiagnostic symptoms (symptoms which may overlap between medical illness and depression) by excluding the somatic content viz.

- Beck Depression Inventory-Primary care (BDI-PC) (7-item) [14]
- Hospital Anxiety and Depression Scale (HADS) (7-item) [15]

A thorough physical and psychological assessment is required. Assessment includes a detailed history, mental state examination, ratings on assessment instruments and longitudinal monitoring of course. It explores how the physical and mental symptoms affect each other, for example, psychological impact of physical illness and worsening of physical symptoms with psychological stress. Apart from an association between physical and psychological symptoms, a clinician needs to assess for other psychosocial factors like pragmatic social support, coping skills and resources, personality aspects, proximal or distal life events, etc.

Management of stress in hospitalized patients

It is imperative to treat both medical and psychiatric illness simultaneously (rather than sequentially), since the prognosis of one is determined by the other.

Non-pharmacological measures

A properly structured and well-orchestrated communication between physician and patient has a positive therapeutic effect. A common trigger to a stressful reaction is receiving bad news e.g. being diagnosed with cancer. There are protocols devised to be followed by the treating team for breaking a bad news to the patients.[16] Communication is important in many other aspects like for informed consent, explanation of the medical diagnosis and education about treatment and prevention. Communication skills can be improved through structured training programs with appropriate feedback to the trainees.

Non-pharmacological methods to manage chronic stress include:

- **Lifestyle management** focussed at balancing work and recreational/ social activities. For example, PRAISES model has been advocated,[17] which is an acronym for the time spent in the following activities: (i) Physical (basic physical and health-care); (ii) Recreational ; (iii) Artistic; (iv) Intellectual; (v) Spiritual; (vi) Employment; and (vii) Social.
- **Physical activity** is considered to reduce stress reactivity in an individual, by reducing stress hormone levels. Mention of exercise in patient 's prescription adapted to his/ her level of motivation and fitness is a common and effective means of managing stress. A prescription of 30-45 minutes of exercise done 3-4 times a week is reasonable. While majority may perceive benefit within days to weeks of starting exercise, some individuals may require months to show improvement.[18]
- **Relaxation training** includes progressive muscle relaxation, diaphragmatic breathing, autogenic training, guided imagery, etc. These have been found to be effective in anxiety disorders, insomnia, etc.[19] Relaxation or stress management has been shown to improve immunity in HIV patients and reduce coronary events in cardiac patients.
- **Coping skills enhancement**: Problem solving therapy aims at fostering the practice of positive problem orientation and application of a

rational problem-solving style. Rational problem solving includes defining the problem, thinking of alternative solutions, making decision, and implementing the solution to verify.[20]

- **Enhancing or developing social support** is also an effective non-pharmacological means to improve outcomes in stress. Mobilisation of social support may help the patient by enhancing his/ her stability and perception of self-worth, and also acts as a buffer to the impact of stressors.[21] One way of adding support is by sharing with peers having similar condition. However, overall evidence is conflicting.
- **Cognitive behaviour therapy (CBT)** is based on the hypothesis that thoughts affect an individual's mood as well as behaviour, and restructuring thoughts can help with mood. Although a structured CBT can be carried out by a trained therapist, some components of CBT can be employed by physicians. For example, unrealistic expectations, whether negative or positive, about the clinical condition and treatment may be targeted. Realistic positive health goals can be set, like routine activity scheduling, exercise, etc.[19]

Few other techniques known to reduce stress include self-help techniques, through writing or narration. Mindfulness-based techniques have been reported to be beneficial.[22]

Simple techniques like frequent visits to see the patient in the ward during stressful time and development of interpersonal connections may also prove beneficial. Not only the clinician, but the support staff like nurses, and social workers can be of help.

Pharmacological measures

Pharmacological measures are required when patient has a diagnosable disorder or has significant distress or dysfunction, not controllable by non-pharmacological or supportive measures,[23] Commonly prescribed medications are:

- **Short-term benzodiazepines** are useful to provide acute symptomatic relief for panic attack or intense anxiety or short-term treatment of insomnia. Clonazepam is commonly preferred over short-acting agents (e.g. alprazolam). Lorazepam may be used in patients with hepatic derangement. Long term use of benzodiazepines is, however, often discouraged by clinicians due to their abuse potential. Benzodiazepines are also avoided in old age due to safety considerations.

- **SSRIs (selective serotonin reuptake inhibitors)** are used if there are associated symptoms of syndromal depression, anxiety or PTSD. SNRIs may be preferred for patients with more somatic symptoms. In elderly patients, mirtazapine may be preferred.
- **Other drugs** e.g. propranolol may be helpful for short-term control of autonomic symptoms of anxiety, though its use is avoided in patients with contraindications e.g. diabetes, asthma, etc. While prescribing medications to in-patients in general hospital, one has to be cautious in prescribing the doses, as medical co-morbidities may be associated with more side-effects due to slower metabolism, slower wash-out, or greater sensitivity to the medication.

Following are general points to be kept in mind [23-25] :

- Try and build a therapeutic relationship (rapport) with patient and provide education
- Consider the interplay of medical and psychiatric aspects
- Offer non-pharmacological measures as first-line for subthreshold or mild symptoms
- Encourage problem-solving strategies Ensure an active, healthy lifestyle
- Start specific pharmacotherapy, if indicated (start low, go slow) Keep the dosing regimen simple and convenient preferably once daily
- Always check for drug-drug interactions. Most SSRIs are potent inhibitors of Cytochrome P450
- Always keep safety considerations in mind e.g. there is some increased risk of gastro-intestinal bleeding (caution in elderly population who often are on NSAIDs, steroids, warfarin, etc.) or hyponatremia in some patients, or serotonin syndrome if patient is on other serotonergic medications (e.g. triptans, tramadol)
- After an initial improvement in the acute phase symptoms, continue pharmacotherapy for several months (six months or more) during the continuation phase.
- Discontinuation has to be gradual, as some agents with shorter half-life might lead to discontinuation symptoms

- Monitor for situations needing an immediate referral to psychiatrist, for instance:
  - suicidality
  - psychotic symptoms
  - symptoms not responding to treatment trials
  - multiple psychosocial issues warranting specialised care those with intensive psychotherapy needs.

Conclusion

Stress has an intricate, complex bi-directional relationship with medical disorders. The prevalence of stress-related conditions is significantly higher in medically-ill population. Stress may worsen the course and outcome of medical conditions. Physicians and staff must be trained to screen and recognize chronic stress and stress-related psychiatric disorders among at-risk groups. Psychiatry may contribute towards collaborative clinical care as well as training and sensitization of healthcare professionals.

References

1. Reynolds M. Stress in Health and Disease. Yale J Biol Med. 2008; 81:53-54.
2. Walker J, Burke K, Wanat M et al. The prevalence of depression in general hospital inpatients: a systematic review and metanalysis of interview based studies. Psycho) Med 2018;48:2285-98
3. Moye J, Rouse SJ. Posttraumatic stress in older adults: when medical diagnoses or treatments cause traumatic stress. Clin Geriatr Med 2014; 30:577-89.
4. Wongpakaran N, Wongpakaran T, Lerttrakarnnon P, Jiraniramai S, Sirirak T, Assanangkornchai S, et al. Prevalence, clinical and psychosocial variables of depression, anxiety and suicidality in geriatric tertiary care settings. Asian J Psychiatry 2018. Available from: http://www.science direct.com/science /article /pii /S 187620181830 7809 (last accessed Mar 10, 2019).
5. Nosarti C, Roberts JV, Crayford T, McKenzie K, David AS. Early psychological adjustment in breast cancer patients: A prospective study. J Psychosom Res 2002; 53:1123 - 30.
6. Mitchell AJ, Chan M, Bhatti H, Halton M, Grassi L, Johansen C, et al. Prevalence of depression, anxiety, and adjustment disorder in oncological, haema tologica l, and palliative-care settings: a meta-analysis of 94 interview-based studies. Lancet Oncol 2011;12:160-74.

7. World Health Organization. The International Classification of Diseases, 10th ed (ICD-10), WHO, Geneva 1992.

8. Scrivo R, Vasile M, Bartosiewicz I, Valesini G. Inflammation as "common soil" of the multifactorial diseases. Autoimmun Rev 2011; 10:369-74.

9. Sartorious N. Comorbidity of mental and physical diseases: a main challenge for medicine of the 21st century. Shanghai Arch Psychiatry 2013;25:68-9.

10. Chen KY, Evans R, Larkins S. Why are hospital doctors not referring to Consultation-Liaison Psychiatry? - a systemic review. BMC Psychiatry 2016; 16. Available from: https: //www.ncbi.nlm.nih.gov /pmc/articles/ PMC5103418/ (last accessed Mar 24, 2019).

11. Goldberg DP, Oater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychol Med 1997;27:191-7.

12. Gilbody S, Richards D, Brealey S, Hewitt C. Screening for depression in medical settings with the Patient Health Questionnaire (PHQ): a diagnostic meta-analysis. J Gen Intern Med 2007; 22:1596- 1602.

13. RothAJ, Kornblith AB, Batel-Copel L, Peabody E, Scher HI, Holland JC. Rapid screening for psychologic distress in men with prostate carcinoma: a pilot study. Cancer 1998;82:1904-1908.

14. Beck AT, Guth D, Steer RA, Ball R. Screening for major depression disorders in medical inpatients with the Beck Depression Inventory for Primary Care. Behav Res Ther 1997;35:785-91.

15. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. Acta Psychiatr Scand 1983;67:361-70.

16. Narayanan V, Bista B, Koshy C. 'BREAKS' Protocol for Breaking Bad News. Indian J Palliat Care 2010; 16:61- 5.

17. Larzelere MM, Jones GN. Stress and health. Prim Care 2008; 35:839-56.

18. Petruzzello SJ, Landers DM, Hatfield BD, Kubitz KA, Salazar WAmeta-analysis on the anxiety-reducing effects of acute and chronic exercise. Outcomes and mechanisms. Sports Med 1991; 11:143 - 82.

19. Siev J, Chambless DL. Specificity of treatment effects: cognitive therapy and relaxation for generalized anxiety and panic disorders. J Consult Clin Psychol2007;75:513-22.

20. D'Zurilla TJ, Nezu AM. Problem-Solving Therapy: A Positive Approach to Clinical Intervention, 3rd Ed. New York: Springer Publishing Company; 2006.

21. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychol Bull. 1985;98:310-57.

22. Grossman P, Niemann L, Schmidt S, Walach H. Mindfulness-based stress reduction and health benefits. A meta-analysis. J Psychosom Res 2004; 57:35-43.

23. Sadock BJ, Sadock VA, Ruiz P Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 10th Ed. Wolters Kluver, Philadelphia 2017.

24. Robinson RG, Krishnan KRR. Depression in medically ill. In: Neuropsychopharmacology: The Fifth Generation of Progress. Eds, KL Davis, D Charney, JT. Coyle, C Nemeroff. American College of Neuropsychopharmacology 2002;1179-85.

25. Taylor DM, Barnes TRE, Young AH. The Maudsley Prescribing Guidelines in Psychiatry, 13th Edition. Wiley-Blackwell 2018.

Chapter8

Assessment and Management of Mental Health Problems in Chronic Medical Illnesses

Udit K. Panda, Bichitra N. Patra
Department of Psychiatry, All India institute of Medical Sciences, New Delhi-110029

Abstract

Mind and body have interacting influences on each other. Diseases affecting the mind and the body can't be studied separately or independently. The diseases of the mind affect the body and vice-versa. In recent years, there have been increased incidence of many lifestyle chronic diseases like diabetes mellitus, hypertension and coronary artery disease. These illnesses are associated with increased psychiatric morbidity, and the drugs used to treat medical illnesses can also have adverse effect on mental health. Conversely, various psychiatric disorders and drugs used to treat them can also increase the risk of various medical illness e.g. metabolic syndrome. In this chapter, the authors have highlighted various aspects of assessment and management of mental health problems while approaching a case of chronic medical illness.

Introduction

As we advance in research and delivery of health services, chronic non-communicable diseases (NCDs) have superseded infectious diseases as the leading cause of death in the world.[1] High morbidity and mortality burden of both NCDs and mental illnesses is a major public health concern in this era. There is strong scientific evidence linking major NCDs and mental illnesses. Mental disorders have a bidirectional relationship with other NCDs, and might act as a forerunner or a consequence of NCDs such as cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes or cancer. There is commonality in risk factors for both the category of illnesses like sedentary life style, obesity and substance dependence.[2] However in clinical practice, mental illnesses are often overlooked. Treating physicians may be well equipped with bio-medical aspects of care, but not for addressing psycho- logical, cultural and social aspects of the illness. Stigma associated

with mental illness also prohibits proper medical evaluation of people with mental illness to screen for chronic medical illnesses in them. Diagnostic overshadowing tends to obscure psychiatric symptoms of milder severity. Thus, proper addressal of comorbidities would go a long way in reducing disability and mortality burden of the chronic medical illnesses.[2]

Factors affecting mental illness and chronic medical illnesses

Both mental and physical health are affected by changes in physiological and emotional states as well as by social factors like employment, housing and economic status. The pathways of biological, psychological and social determinants generate a greater chance of someone with a mental illness or chronic physical illness developing a co-morbid condition.

Mental disorders share many features with other chronic communicable and non-communicable diseases including heart diseases, stroke, diabetes and HIV/AIDS. They share underlying causes and overreaching consequences. They are highly interdependent and have propensity to occur together. Mental illness itself can alter physiological homeostasis like hormones and sleep, and cause physical symptoms. Social and cognitive changes associated with mental illnesses can negatively impact adaptive functioning of the individual towards healthy life style and the sufferer may lack motivation to execute life style changes necessary for preventing chronic medical il lnesses. Unhealthy eating and sleeping habits and substance dependence can further complicate health. Treatment of mental illnesses with psychotropics can give rise to metabolic side effects which act as precursor for chronic NCDs and increase vulnerability to a range of physical ailments.[2,3]

Similarly, chronic physical conditions are associated with high emotional stress. Chronic pain, impaired blood sugar and dysfunctional brain blood circulation can precipitate symptoms of depression and anxiety. Disability and morbidity associated with medical illnesses bring social isolation, poverty and distress. People with chronic physical conditions are known to report poor mental health in self-report questionnaires. Mental and physical illnesses also exhibit shared symptoms like lethargy, food craving, sleep disturbance, decreased energy and memory impairment. These factors increase the risk of deterioration of physical condition, and simultaneously have a detrimental impact on mental wellbeing of the person.[3,4]

Common co-existing chronic medical disorders and mental illness

People living with more common physical conditions face higher risk for mental illness than less common conditions. Here we discuss mental illnesses associated with common chronic physical illnesses.

Diabetes

Depression has two to three times higher incidence among people with diabetes. Presence of depressive symptoms is correlated with poor glycemic control, reflected by higher levels of glycated haemoglobin and treatment non-adherence for diabetes.[5] Comorbid depression in diabetes is also associated with increased complications of diabetes, mainly microvascular events. Both diabetes and depression are one of the most common causes of disability worldwide. Depression is also recognized as a risk factor for impaired glycemic control which later leads to development of diabetes. Studies assessing comorbidities in diabetes suggest that depression is associated with 60% increase in risk of diabetes. Similarly, type 2 diabetes mellitus is associated with a 15% increase in risk of depression. Diabetes is also more common in people with severe mental illnesses and substance use disorders. Diabetes in patients with pre-existing mental illness poses unique challenges for treatment initiation and compliance. Other common mental illnesses like anxiety disorders, obsessive compulsive disorder, sleep disorders and sexual dysfunction are also more common in patients with diabetes. Role of antipsychotic medications in triggering diabetes is also established.[6]

Cardiovascular diseases

Cardiovascular diseases (CVDs) include cerebrovascular diseases, congenital heart diseases, coronary artery disease, rheumatic heart disease, peripheral arterial disease and deep vein thrombosis.

CVDs cause more than half of the deaths worldwide. Depression is present in up to 20% of people with CVDs. It is also established that depression and anxiety at least doubles the risk of a poorer outcome in a cardiac event.[7] Patients with severe mental disorders die 15 to 20 years earlier than the normal population, mostly due to cardiac events.[8] The risk of stroke or a cardiac event in a patient of severe mental disorder is approximately double than the normal population.[9] Risk factors for CVDs include behavioural factors like unhealthy diet, obesity, physical inactivity and use of alcohol and tobacco which are often found in patients with mental illness. Social factors like urbanization, nuclear family, poverty and stressful life have been hypothesised to give rise to both mental illness and CVDs. Depression and anxiety have been found to be independent risk factors for coronary heart disease. These also prognosticate a poorer outcome for the disease. There seems to be complex relationship in aspects of risk factors, causation, treatment adherence, morbidity and mortality when a comorbid severe mental illness and CVD are considered. Second generation antipsychotic medications are known to precipitate metabolic syndrome which is closely associated with CVDs.[10]

Cancer

About 25% of people with cancer have depression and/or anxiety, and only a small number of them receive any mental health care. While severe mental disorders are not associated with increased prevalence of cancer, life style associated with mental illness like increased smoking accentuates the risk. Mental illness in patients with cancer is associated with poorer quality of life, poorer compliance with treatment, extended hospitalization and a greater risk for deliberate self-harm.[11]

Chronic respiratory disorders

Asthma and COPD are two of the commonest NCDs. Depressive and anxiety disorders are commonly associated with both the illnesses. Prevalence of depression increases with severity of COPD, with higher likelihood of exacerbations and a poorer outcome. Anxiety disorders like agoraphobia and panic disorder are more common in patients of asthma. The rate of respiratory illness is higher in patients with severe mental disorders like schizophrenia. This is probably due to smoking which is a common finding in patients with severe mental disorders.[12]

Assessment of mental health problems

Stress is invariably associated with chronic medical illnesses. It is normal to experience grief about the diagnosis of a chronic illness before eventually accepting and adjusting to it. But some people may develop protracted distress and eventually a psychiatric disorder, most commonly depression or anxiety. It is very important to have a knowledge of normalcy in mental health while evaluating suspected mental health problems in a patient with chronic medical illness. The following points should be kept inmind:

a) A number of physical symptoms overlap in presentation of physical and mental illnesses, e.g. impaired sleep, disturbed appetite and lack of energy can be a manifestation of depressive disorder and hypo-thyroidism.

b) Side effects of treatment employed for medical condition may manifest as symptoms of mental illness, e.g. steroids causing mood changes or aggression, interferon causing depression.

c) Limitations in functionality brought by the medical illness bringing "understandable" distress which is misattributed as a symptom of depressive illness byclinician.

d) Clarification of mental illness and substantiation of diagnosis may be aided by examining prior history, risk factors in personal, social and family history, temporal sequence of symptom evolution.

e) Other psychosocial factors that contribute continuation of illness must be explored. e.g. interpersonal conflicts, unemployment, financial strain, activities of daily living, health care access, etc.

f) Contribution of disability associated with medical illnesses and its role in mental health problems must be explored.

g) A detailed treatment history elucidating patients' prior and present medication, herbal supplements, over-the-counter drugs, etc. should be noted. This would help in detecting potential drug-drug interactions, physical and behavioural symptoms and mood changes that are caused by pharmaceutical agents.

h) Substance use history including type, frequency, patterns, withdrawal, most recent use, and prior treatment attempts should be explored.

i) Target mental health symptoms should be identified and referral to psychiatric services should be undertaken.

j) Relevant past medical records should be reviewed for details of medical and/or surgical problems, laboratory findings and treatment received. Primary treating physician/ treating team must be contacted for clarification regarding details of consultation request.

k) A detailed physical assessment should be per formed. Practice guidelines for psychiatric consultation in the general medical setting by the Academy of Psychosomatic Medicine recommend reviewing the results of previous physical examination, focussed neurologic and physical assessment, evaluating organ specific complaints and medication side effects.

l) A detailed mental status examination including evaluation of general cognitive functions must be performed. Whenever appropriate, a standardized cognitive assessment using assessment tools like Mini Mental State Examination or Confusion Assessment Method (CAM) may be employed. If suicidality is present, assessment of suicide risk must be done.

m) Structured assessment scales, as appropriate to target mental health symptoms like Hamilton Rating Scale for Depression (HAM-D) for depression may be employed during initial evaluation and to monitor progress with treatment.

n) Three diagnostic approaches are suggested while evaluating psychiatric symptoms in a patient with medical disorder:

   i. *Inclusive Approach:* All symptoms are counted (has high sensitivity and low specificity)

ii. *Exclusive Approach:* Only symptoms that are independent of the current medical illness are counted (has low sensitivity and high specificity)

iii. *Substitutive Approach:* Somatic symptoms that overlap with medical illness are replaced with affective or cognitive symptoms (potential maximization of both sensitivity and specificity). e.g. sleep disturbance substituted with social withdrawal and diminished speech, fatigue substituted with guilt and pessimism.[13]

Treatment

Basic guidelines for using psychotropics in chronic medical disorders[14]

1. Review patient's primary medical problem, laboratory findings and imaging studies, current and past medication, etc.
2. Check for existing adverse effects of medication that might be contributing to patient's current psychiatric symptoms.
3. Choosing a drug, taking into account drug absorption, bioavailability, metabolism, renal and hepatic clearance, potential drug-drug interaction and past response to psychotropic drug if any.
4. Select a drug with least adverse effect profile. Avoid polypharmacy as much as possible.
5. Prescribe medication in a simplified regimen. Explain clearly regarding drug indication, target doses, drug titration as necessary and requisite monitoring.
6. Start with a low dose and optimize drug dosing slowly to achieve desired clinical effect.
7. Add or discontinue drugs one at a time.

Use of psychotropics in individual illnesses

Among antidepressants, selective serotonin reuptake inhibitors (SSRIs) are preferred in managing depressive and anxiety symptoms in chronic medical illnesses because of their relatively safer side effect profile. Sertraline and fluoxetine are generally preferred in diabetes while sertraline and escitalopram are agents of choice in presence of heart disease because of their favourable cardiac profile.[15] In COPD, sedating antidepressants are preferably avoided. Prophylaxis with antidepressants in addition to treatment in post-stroke depression is well documented.[16] Bupropion and clomipramine should be used with high caution in epilepsy as they are known to precipitate seizures. [17]

Antidepressants like monoamine oxidase inhibitors and tricyclic antidepressants can cause orthostatic hypotension and cardiac conduction disturbances especially QTc prolongation. QTc prolongation can lead to life threatening ventricular arrhythmia known as torsades de pointes. Fatigue and apathy are prominent features associated with depression in Parkinson's disease, cancers and HIV/AIDS. Psychostimulants like modafinil, methylphenidate and dopamine-agonists have been used to target these symptoms but evidence is lacking.[18]

Benzodiazepines, used for acute management of anxiety, should be avoided in post-stroke depression, cancer and HIV because of associated cognitive impairment. Non-benzodiazepine anxiolytics like buspirone is preferred in COPD as benzodiazepines reduce respiratory drive. Second generation antipsychotics are known to cause weight gain, impair glycemic control and promote dyslipidemia. Olanzapine and clozapine carry maximal risk of precipitating metabolic syndrome and should be used in conditions like diabetes, stroke and heart diseases with proper clinical prudence.[19] Both typical and atypical antipsychotics are known to increase mortality on long term use in patients of stroke and dementia and carry US Food and Drug Administration (USFDA) black box warning in regard to this. Conventional antipsychotics are avoided in psychosis with Parkinson's disease due to their extrapyramidal side effects (EPS). Clozapine and quetiapine are preferred agents in such condition due to minimal propensity for EPS.[20] Clozapine and low potency antipsychotics can lower seizure threshold and are to be used with caution in presence of pre-existing epilepsy. Haloperidol, risperidone and fluphenazine seem to have the lowest effect on seizure threshold. Aripiprazole may be used as a first line agent in cardiac diseases considering its safer metabolic and cardiac side effect profile. The choice of antipsychotics should be decided according to individual illness, should be started at lowest possible dose and drug titration should be slow.

Mood stabilizers like valproate and carbamazepine are avoided in presence of hepatic impairment. Valproate is the mood stabilizer of choice in cardiac diseases though monitoring for thrombocytopenia is required.

A number of medications used in various chronic medical illnesses can give rise to symptoms of mental illness like agitation, depression, anxiety and delirium. For example, immunomodulator drugs like corticosteroids, mycophenolate, antitubercular medication like isoniazid and chemo-therapeutic drugs can precipitate an episode of psychosis. Alpha-adrenergic blockers, antiarrhythmic agents and digoxin are known to cause mood symptoms in patients receiving them. They should be identified promptly and treated with appropriate medications.

Psychosocial aspects of treatment

Psychosocial interventions are increasingly being used in routine medical care not only to manage mental health problems, but also to address treatment issues related to primary medical illness like adjustment to morbidity and disability, treatment compliance and rehabilitation.[21] In patients with cardiac ailments, cognitive behaviour therapy (CBT) has been found effective in managing depression and social isolation. Besides CBT, relaxation exercises and exercise-based rehabilitation have been demonstrated to be efficacious in patients of ischaemic heart disease. Psychotherapy has a proven role in preventing post-stroke depression but its therapeutic value in established depression is dubious. In patients with diabetes, safe-management training and CBT are effective in reducing depressive and anxiety symptoms. Some studies have also shown CBT to be effective in reducing blood glucose. Pulmonary rehabilitation has been shown to be an effective integrative care package in managing patients with COPD. CBT is also effective in patients with chronic respiratory conditions and improving quality of life. Various interventions tried in cancer patients with mental health problems include CBT, supportive psychotherapy, relaxation, education and information, etc. Psychosocial and psycho-educational interventions are effective in addressing depressive and anxiety symptoms in various cancers. In patients with medical disorders with co-morbid substance dependence, brief intervention, motivation enhancement therapy and relapse prevention are shown to have positive results on treatment outcomes. Behavioural interventions like biofeedback and relaxation exercise have also been shown to decrease pain in musculoskeletal illnesses like arthritis.[22-23]

Treatment of non-adherence and non-compliance

Non-adherence to treatment is commonly encountered in treating comorbid physical and psychiatric illnesses. The following table summarizes common causes of such behaviour and strategies to overcome it.[24]

Cause	Strategy
Practical/ logistic limitations	Social worker consult
Shame/ embarrassment	Dynamic/ cognitive therapy to treat dysfunctional thoughts/ emotions
Medication side effect/ frequent dosing	Adjust/change medication
Incomplete education about problem	Psychoeducation
Need to demonstrate autonomy	Cognitive behaviour therapy
Memory impairment/ executive dysfunction	Improve social support, educate caregiver
Cultural beliefs	Clarify capacity, psychoeducation

Conclusion

Stigma associated with mental illness acts as a barrier to psychiatric help seeking in chronic medical illness. It can directly deter people from accessing mental health care services, thus delaying proper diagnosis and treatment of common mental ailments, which can otherwise be easily treated. On the other hand, common physical symptoms like pain can be misattributed to be of psychological origin by treating physicians by creating a diagnostic over shadowing. Mental illnesses and chronic physical illnesses share some common symptomatology which further poses diagnostic challenge. Addressing comorbid mental illnesses in chronic communicable and non-communicable diseases requires a patient centred, integrated approach. There is strong evidence for effectiveness of collaborative care to address mental health issues in chronic medical illnesses. Finally, there is a relative dearth of research in examining comorbid mental and chronic physical illnesses and effectiveness of pharmacological and non-pharmacological interventions in such special populations. More knowledge in this regard will help in formulating assessment and treatment guidelines for the same.

References

1. The top 10 causes of death [Internet]. https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death (last accessed Feb 12, 2019).
2. Cohen A. Addressing comorbidity between mental disorders and major noncommunicable diseases. WHO Regional office for Europe: Copenhagen; 2017.
3. Turner J, Kelly B. Emotional dimensions of chronic disease. West J Med 2000; 172:124-8.
4. Piane GM, Smith TC. Building on evidence base for the co-occurrence of chronic disease and psychiatric distress and impairment. Prev Chronic Dis 2014;11:140211.
5. Ducat L, Philipson LH, Anderson BJ. The mental health comorbidities of diabetes. JAMA 2014;312:691-2.
6. de Groot M, Golden SH, Wigner J. Psychological conditions in adults with diabetes. Am Psychol 2016; 71:552- 62.
7. RoestAM, Martens EJ, de Jonge P, Denollet J. Anxiety and risk of incident coronary heart disease. J Am Coll Cardiol 2010;56:38-46.
8. Laursen TM, Munk-Olsen T, Agerbo E, Gasse C, Mortensen PB. Somatic hospital contacts, invasive cardiac procedures, and mortality from heart

disease in patients with severe mental disorder. Arch Gen Psychiatry 2009; 66:713-720.

9. Osborn DPJ, Levy G, Nazareth I, Petersen I, Islam A, King MB. Relative risk of cardiovascular and cancer mortality in people with severe mental illness from the United Kingdom's General Practice Research Database. Arch Gen Psychiatry 2007;64:242-249.
10. De Hert M, Detraux J, Vancampfort D. The intriguing relationship between coronary heart disease and mental disorders. Dialogues Clin Neurosci 2018; 20:31-40.
11. Butow P, Price MA, Shaw JM, Turner J, Clayton JM, Grimison P, et al. Clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients: Australian guidelines. Psychooncology 2015; 24:987- 1001.
12. Chaudhary SC, Nanda S, Tripathi A, Sawlani KK, Gupta KK, Himanshu D, et al. Prevalence of psychiatric comorbidities in chronic obstructive pulmonary disease patients. Lung India 2016;33:174-8.
13. Cavanaugh S, Clark DC, Gibbons RD. Diagnosing depression in the hospitalized medically ill. Psychosomatics 1983;24:809-15.
14. Leigh H, Streltzer J. Handbook of consultation-liaison psychiatry, second edition. Springer, 2015.
15. Markowitz SM, Gonzalez JS, Wilkinson JL, Safren SA. A review of treating depression in diabetes: emerging findings. Psychosomatics 2011; 52:1-18.
16. Starkstein SE, Mizrahi R, Power BD. Antidepressant therapy in post-stroke depression. Expert Opin Pharmacother 2008;9:1291-8.
17. Kanner AM. Depression and epilepsy: a new perspective on two closely related disorders. Epilepsy Curr 2006;6:141-6.
18. Bruera E, Valero V, Driver L, Shen L, Willey J, Zhang T, et al. Patient-Controlled Methylphenidate for Cancer Fatigue: A Double-Blind, Randomized, Placebo-Controlled Trial. J Clin Oncol 2006; 24:2073- 8.
19. Jin H, Meyer JM, Jeste DV. Atypical antipsychotics and glucose dysregulation: a systematic review. Schizophr Res 2004; 71:195 - 212.
20. Aarsland D, Marsh L, Schrag A. Neuropsychiatric symptoms in Parkinson's disease. Mov Disord 2009;24:2175-86.

21. Fekete EM, Antoni MH, Schneiderman N. Psychosocial and behavioral interventions for chronic medical conditions. Curr Opin Psychiatry 2007; 20:152- 7.

22. Hackett ML, Anderson CS, House A, Xia J. Interventions for treating depression after stroke. Cochrane Database Syst Rev 2008;4:CD003437.

23. Rodin G, Lloyd N, Katz M, Green E, Mackay JA, Wong RKS, et al. The treatment of depression in cancer patients: a systematic review. Support Care Cancer 2007;15:123-36.

24. Rafii F, Fatemi NS, Danielson E, Johansson CM, Modanloo M. Compliance to treatment in patients with chronic illness: A concept exploration. Iran J Nurs Midwifery Res 2014;19:159-67.

Chapter9

Assessment and Management of Mental Health Problems in Pediatric Settings

Susanta Kumar Padhy[1], Nidhi Chauhan[2]
[1]Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh-160012
[2]Department of Psychiatry, Government Medical College & Hospital, Chandigarh- I I0062

Abstract

The age appropriate development (cognitive, emotional, social, motor) of children is *a strong foundation for the overall physical and mental health of children. Childhood provides clinicians with a window period for health promotion, early identification and management of developmental and behavioural problems. Pediatricians/physicians are the first and, in many instances, the only contact for families seeking medical help for their troubled children, if at all help* is *being sought. Failure/inability to identify mental health problems in children can go a long way and have detrimental effects on overall physical and mental health development of children and add to socioeconomic burden on the society This chapter aims to highlight various reasons with which children may present to pediatric out-patient clinics or emergency settings. The cause of mental health problem in children may be entirely due to a psychiatric illness/condition or purely a consequence of an underlying organic etiology or a combination of both. The approach towards reaching to a diagnosis is discussed with certain prerequisites to be followed while dealing with children in crisis and their families. Detailed and thorough past and present history, physical examination and mental status examination form the cornerstone to arrive at differential diagnosis and thus make way for adequate management plan and necessary investigations to be ordered. Risk of self-harm/suicidal ideation should always be assessed and criteria followed for restraint and referral for consultation with mental health professionals. Both pharmacological and non-pharmacological interventions may be required for optimal response.*

Introduction

Children's overall health including physical and mental well-being has its foundations in the age appropriate development of cognitive skills,

emotional well-being and social competence. Childhood is an important developmental period for health promotion, as well as for early identification and management of developmental and behavioral problems. Yet, opportunities for promoting children's cognitive, emotional and social development are often missed in places, which the children and families most commonly visit for primary care.

Mental health problems are among the top contributors to the global burden of disease and are the leading cause of disability in children.[1] A significant proportion of children and adolescents experience mental health problems. But not all have access to mental health services, and thus remain untreated. And thus, healthy development is hampered. Most adult psychiatric disorders have their onset during childhood/adolescence. A significant proportion of children struggle from time to time with their behaviour, emotions, inability to get along with others, etc., but may not have problems amounting to a diagnosable mental disorder. Either help is never sought for such children or they may seek help from primary care physicians who are often not able to identify issues at hand, and hence are not able to provide help.

Why deal with mental health problems of children in paediatric setting?

The most important reason is that families approach pediatricians for any problem (behavioural or physical) arising in their children and thus they are the first contact among health professionals. It is considered to be less stigmatising compared to consulting a mental health professional. Also, over the last few decades it has been seen that identification of mental health problems by physicians has more than doubled.[2] Although, physicians are able to identify mental health problems in children, they may lack the professional expertise required to deal with emotional and social needs of children. Additionally, there is a dearth of trained and qualified child mental health professionals not only in developing countries but also in highly resourced countries.[1] Thus, there is reluctance on the part of physicians to refer children for management of mental health problems, given the dearth of child psychiatrists and suboptimal communication between physicians and mental health professionals. Most of the times, even families do not turn up when asked for referral to a mental health professional.[3]

Assessment of mental health problems/behavioural issues in paediatric setting

The first and foremost step in management of mental health problems in pediatric setting is to ascertain the cause of the mental health problem which can be due to a number of reasons. These can be broadly classified into 4 categories:

1. Primary medical disorders presenting with mental health problems.
2. Primary psychiatric disorders.
3. Mental health problems as a result of drug side effect.
4. Both medical disorder and psychiatric disorder coexist.

1. Primary medical disorders presenting with mental health problems: It is important to evaluate a child presenting with behavioural problems for the possibility of an underlying medical condition. Although, distinguishing an organic etiology from a 'functional' psychiatric disorder can sometimes be difficult, nonetheless, it assumes importance because of the quick reversibility of behavioural problems once the underlying medical condition is eliminated. Also, failure to recognise an underlying medical condition can be disastrous, since this will lead to continuation of the behavioural disturbance with its own consequences.[4] Table 1 depicts the medical conditions that can present as behavioural problems.

Table-I: Medical conditions presenting as behavioural problems

System involved	Examples
Central nervous system	Infections-meningitis, encephalitis, tuberculosis, abscess, HIV Head injury Tumors Vascular-venous thrombosis, aneurysm, ischemia, Stroke Seizures Hydrocephalous Headaches e.g. migraine, cluster headache, etc. Neurodegenerative disorders-multiple sclerosis, Huntington's chorea Congenital malformations Delirium & dementia
Electrolyte disturbance	Hyponatremia, hypocalcemia, hypoglycemia, hyperglycemia, hyperammonemia , ketoacidosis, uremia
Endocrine disorders	Diabetes, hypothyroidism, hyperthyroidism, thyroid storm, hypoparathyroidism, hyperparathyroidism, Addison's disease, Cushing disease, hypopituitarism, phaechromocytoma,
Inborn errors of metabolism	Gaucher's disease, lipid storage diseases, Niemann-Pick disease
Respiratory system	Hypoxia, hypercarbia, respiratory failure
Hematologic conditions	Malignancies, paraneoplastic syndrome
Rheumatological conditions	Systemic lupus erythematosus, sarcoidosis
Nutritional deficiencies	Anemia, vitamin B_{12} deficiency
Toxins	Lead poisoning, carbon monoxide poisoning, organophosphates, volatile substances
Others	Wilsons disease, porphyrias

2. **Primary psychiatric disorders:** Many psychiatric disorders can present in pediatric settings owing to the sympatomatology e.g. somatic complaints, headache, acute anxiety attacks, unresponsiveness, violent/ aggressive behaviour. The disorders include self-harm, depression presenting with somatic complaints, adjustment disorder, posttraumatic stress disorder, anxiety disorders, dissociative disorders, somatoform disorders, substance use/withdrawal/overdose, conduct disorder, oppositional defiant disorder, neurodevelopmental disorders (intellectual disability, autism spectrum disorder, attention deficit hyperactivity disorder).

3. **Mental health problems as an adverse reaction to drugs:** Quite a number of drugs are capable of causing mental health problems in therapeutic doses, and during sudden withdrawal or overdose. Some important examples are given as below:

   Drug withdrawal: Sudden withdrawal of alcohol, benzodiazepines, barbiturates, cocaine, opioids, psychotropic medications (antipsychotics, antidepressants) may cause behavioural problems amounting to serious conditions.

   Drug overdose: Overdose of drugs of abuse, e.g. alcohol, amphetamines, marijuana, phencyclidine, heroin, cocaine, MDMA (3, 4-methylenedioxy-methamphetamine), LSD (lysergic acid diethylamide) and "bath salts" cause mental health problems.

   Prescription drugs: Many prescription drugs can cause mental health problems in therapeutic and/or supratherapeutic doses e.g. steroids, opioids, anticholinergics, statins, antihypertensives, antiepileptics, antiviral agents, antibiotics, decongestants, antiarrhythmics, drugs for asthma, digoxin, lithium, immunosuppressive agents, etc. This list is not exhaustive and there are many such drugs.

Approach to a patient presenting with mental health/behavioural problems in pediatric setting:

Children with mental health problems may present to pediatricians in emergency setting or in a regular clinic/outpatient department. Patients coming with a psychiatric emergency require a quick and thoughtful response from health professionals with assessment of degree of stress and safety of patient, providing medical stabilization and giving specific interventions to alleviate symptoms.[5]

There are certain essential prerequisites for managing pediatric mental

health conditions, which are as follows:

- Establishment of an effective therapeutic relationship with the mental health professional and also with the family and patient in crisis.
- The degree of urgency and response time should be clearly defined for which consultation is sought.
- There should be continued dialogue between the treating teams for agreement with the management plan and its disposition.
- Guidelines for admission for psychiatrically ill children should be available.
- Knowledge of child protection laws, child welfare, social agencies, etc. is considered beneficial.
- Appropriate and adequate physical space for children and families in crisis helps in hassle free disposition of services.
- Screening for self-harm risk should be done and one to one supervision provided.
- Confidentiality should be maintained with the 'just relevant' information being imparted to other liaison departments.

Medical stabilization: Children presenting to pediatric emergency usually require medical stabilization before psychosocial intervention and exploring about factors that lead to the crisis. Usual resuscitation protocols (ABC- airway, breathing, circulation secured) should be followed in emergency situation.[4] Drug ingestion whether intentional or unintentional may not be immediately recognised and children may also not provide information. Most overdoses require supportive treatment.

Evaluation for organic/medical etiology for mental health problems:

A main concern that medical condition may be the underlying cause of a psychiatric problem has strengthened the idea that 'patients with psychiatric symptoms especially in the emergency should receive a full medical evaluation'. This may be the only opportunity to uncover an underlying medical condition/injury. Psychiatric symptoms may have been caused or exacerbated by medical condition, and medical needs for psychiatric patients may otherwise remain unmet, which need to be addressed. A thorough history regarding the onset of symptoms, exacerbating factors and drug intake, followed by detailed physical examination with particular focus on neurologic, cardiac and respiratory system examination and record of vital signs provide important

clues as to which diagnostic/screening investigation should be asked for.

The differential diagnosis of medical conditions with mental health problems is extensive. However, there are certain pointers to indicate medical etiology, e.g.

- Recent onset of new symptoms
- History of substance use
- Younger children (i.e. age <12 years
- Abnormal vital signs on physical examination
- Abnormalities on physical examination
- Abnormalities on neurologic examination
- Behavioural symptoms like disorientation, visual hallucinations, fluctuating mental status, emotional lability, etc.

Psychiatric history: The cornerstone to arriving at a diagnosis remains a good and thorough history. History should be obtained from both the child and care takers. History should include details of the behaviour under analysis, precipitating/ maintaining/ relieving factors, substance use, academic performance, living situation, relationship with family and peers, family composition and neighbourhood environment. Any past history of disruptive behaviour disorders, self-harm attempts, psychiatric hospitalizations, sexual or physical abuse, substance use, adverse childhood experiences (e.g. abuse, domestic violence, divorce), and medical conditions such as seizures, head injury, failure to grow, jaundice, and medications taken, should be explored. Special interview techniques may be required with adolescents who require their personal space, time and privacy.

Evaluation for depression and screening for self-harm/ suicidal risk is important. A four question tool is proposed for detection of high risk of suicide.[6] These questions are:

1. History of self-harm
2. Past psychiatric treatment
3. Drug/benzodiazepine overdose
4. Current psychiatric treatment.

This information can be readily obtained from the patient as well as family members and is helpful in formulating the management plan.

Mental status examination: Mental status examination refers to the examination of the clinical state of a person's emotional and intellectual

functions.[4] The elements of mental status examination are listed in table 2:

Table 2: Elements of mental status examination.

Element	Description
Orientation	Determine level of consciousness and orientation to time, place, person and situation.
Relating ability	Evaluation of ability to relate to the examiner based upon eye contact, spontaneous conversation, trust.
General appearance, attitude & behaviour	Assess physical size, personal hygiene, clothing, neatness, grooming, posture, gait, age appropriateness, degree of distraction, ability to manage irritability/anger, rapport.
Speech	Assess for speech volume, tone, speed, spontaneity, coherence, articulation, reaction time, reactivity.
Affect	Sad, irritable, fearful, anxious, euphoric.
Thought process and perception	Evaluate for thought flow, content of thought (preoccupations, concerns, worries, suicidal ideation, delusions), hallucinations, obsessions.
Memory	Assess for retention, recall, recent and remote memory.
Cognitive functions	Assess for gross level of intelligence, fund of knowledge, ability to think and reason appropriate to age.
Judgment & Insight	Evaluation of degree of understanding of current issues and ability to analyse its consequences.
Strengths	Determine areas of competence, interests.

The aim of doing a detailed mental status examination is to collate the information obtained for a comprehensive understanding of the child.

Investigations:

Common investigations that should be ordered depend upon the history and examination. Some of these may include serum electrolytes, urea, creatinine, complete hemogram, urine toxicological screen, electrocardiogram, CT scan head, MRI brain, spinal fluid analysis, viral markers, etc. Additional tests that may be appropriate include thyroid function test, Vitamin B_{12}, serum folate, vitamin D, tests for rheumatological disorders and arterial blood gas. Literature supports 'focussed medical assessments' i.e. a process whereby an organic etiology for the behavioural problems has been excluded, and evaluation for any coexisting medical illness/ condition has been undertaken.[7] Routine diagnostic testing is not recommended because of a low yield and is unlikely to change the management. Routine laboratory testing need not be performed in clinically stable patients (i.e. alert, cooperative patients with normal vital signs and non-contributory history and physical examination). Discrepancy, if any, between treating teams should be resolved by direct communication.[8]

Management

The primary care physicians/pediatricians play an important role in identifying children with mental health problems presenting to them. Their role may vary depending upon the presentation which may include parent education (regarding parenting concerns, appropriate disciplining techniques, reassurance), screening for any delays and/or deviances in developmental milestones (cognitive, social, emotional gross motor and fine motor), treatment of certain neurodevelopmental conditions (ADHD, comorbid physical illnesses), and referral for severe cases with mental health problems.

Use of restraint in paediatric setting: Restraining children and adolescents, although uncommon, may be required in a highly uncooperative/ violent patient. A stepwise approach should be followed before physically restraining a patient.[9] These include:

- Verbal de-escalation: This includes talking to the patient and distracting him/her.
- Calming manoeuvres e.g. "Show of force" usually elicits cooperation.
- Chemical restraint: Use of sedative/ hypnotic agents preferably orally. Intramuscular / intravenous route may be used if patient does not accept oral medications. Most commonly used medications are benzodiazepines (lorazepam) and haloperidol either alone or in combination.
- Physical restraint: A less aggressive form of physical restraint is 'therapeutic holding' i.e. holding by at least 2 persons in order to give time to patient to regain control over behaviour. This is a less confining alternative of physical restraint and is usually limited up to 10 minutes and should be used prior to physical restraint.[9,10]

Physical restraint should be used as the last resort and documentation of nature of emergency, that it is for patient's benefit and that a mention about parents' consent, is mandatory. Continuous monitoring of patient (cardio-pulmonary status, limb neurovascular status, vital signs) is required for the duration, physical restraint is ordered. Duration is generally shorter compared to that used in adults.

More severe form of mental health problems require consultation from a child and adolescent mental health professional. Referrals can be sought for:[11]

- Assessment of behavioral problem and ongoing management.
- Assessment of behavioral problem and initial treatment, and back referral for continued care.

- Consultation and evaluation with continued supervision of treatment provided by other practitioners.
- Consultation without direct evaluation of the patient- through a treatment team/intervention team.
- Informal discussion about issues in patient care by telephone, email, and direct conversation are also helpful.

Broad criteria for requesting referrals are:

- Emotional or behavioral problems posing a threat to self or others (suicidal behavior, aggression/ violence, severe eating disorder).
- A recent onset of change in emotional/ behavioral functioning without any recognizable precipitating factor (e.g. sudden school refusal behavior, suicidal behavior in previously well-functioning individual).
- Emotional/behavioral problem in a family with parental psychiatric illness/substance abuse/marital discord/parental separation/domestic violence.
- Clear signs/symptoms of psychiatric illness e.g. hallucinations, suspiciousness, fearfulness, anxiety, unprovoked behavior outbursts.
- Non-response/partial response to adequate trial of treatment intervention for behavioral/emotional problems.
- Complex presentation involving cognitive, psychological, emotional issues which may be related to an organic etiology or psychiatric illness.
- History of abuse or neglect.
- Prescription of multiple psychotropic medications.
- Severe emotional/behavioural problems in children younger than five years of age.
- Comorbid physical illness and psychiatric illness e.g. secondary depression to chronic medical condition interfering with treatment of medical condition.

Pharmacological management includes treatment with antipsychotics, antidepressants, stimulants, mood stabilizers and benzodiazepines depending upon the diagnosis arrived at.

References

1. Wissow LS, van Ginneken N, Chandna J, Rahman A. Integrating children's mental health into primary care. Pediatr Clin North Am 2016;63:97- 113.
2. Kelleher KJ, Mclnerny TK, Gardner WP, Childs GE, Wasserman RC.

Increasing identification of psychosocial problems: 1979-1996. Pediatrics 2000; 105; 1313-1321.

3. Kelleher KJ, Campo JV, and Gardner WP. Management of pediatric mental disorders in primary care: Where are we now and where are we going? Curr Opin Pediatr 2006;18:649-653.

4. Baren JM, Mace SE, Hendry PL, Dietrich AM, Goldman RD, Warden CR. Children's mental health emergencies part 2: emergency department evaluation and treatment of children with mental health disorders. Pediatr Emerg Care 2008;24:485- 498.

5. Dolan MA & Fein JA. Committee on Pediatric Emergency Medicine. Technical Report-Pediatric and adolescent mental health emergencies in the emergency medical services system. Pediatrics 2011;127:e1356-1366.

6. Cooper J, Kapur N, Dunning J, Guthrie E, Appleby L, Mackway-Jones K. A clinical tool for assessing risk after self-harm. Ann Emerg Med. 2006; 48:459-466.

7. Chun TH, Mace SE, Katz ER. American Academy of Pediatrics Committee On Pediatric Emergency Medicine, American College of Emergency Physicians, Pediatric Emergency Medicine Committee. Evaluation and management of children and adolescents with acute mental health or behavioral problems. Part I: Common clinical challenges of patients with mental health and/or behavioral emergencies. Pediatrics 2016;138:e15- 70.

8. Lukens TW, Wolf SJ, Edlow JA, Shahabuddin S, Allen MH, Currier GW American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Critical Issues in the Diagnosis and Management of the Adult Psychiatric Patient in the Emergency Department. Clinical policy: Critical issues in the diagnosis and management of the adult psychiatric patient in the emergency department. Ann Emerg Med 2006;47:79-99.

9. American Academy of Pediatrics. Committee on Pediatric Emergency Medicine. The use of physical restraint interventions for children and adolescents in the acute care setting. Pediatrics 1997;99:497-498.

10. Miller D, Walker MC, Friedman D. Use of a holding technique to control the violent behavior of seriously disturbed adolescents. Hosp Community Psychiatry 1989; 40:520-524

11. American Academy of Child and Adolescent Psychiatry. Recommendations for Pediatricians, Family Practitioners, Psychiatrists, and Non-physician Mental Health Practitioners. When to seek referral with child adolescent mental health professional. (Available from: https://www.aacap.org/AACAP/Member_Resources/Practice_Information/When_to_Seek_Referral_or_Consultation_with_a_CAP.aspx, Last accessed 3 August 2019)

Chapter 10

Assessment and Management of Mental Health Issues in End of Life Care

Kiran Jakhar,[1] Sriniwas Rajkumar,[2] Rohit Verma[3]

[1]Department of Psychiatry, Government Institute of Medical Sciences, Greater Noida-201310

[2,3]Department of Psychiatry, All India Institute of Medical Sciences, New Delhi 110029

Abstract

With the increasing population of elderly and illnesses with poor outcome, the healthcare system is turning its head towards the adequate reinforcement of palliative care in this vulnerable population. The goal of palliative care is to relieve the suffering of patients and their families. It is accomplished by the comprehensive assessment and treatment of physical, psychological, social, and spiritual issues experienced by patients or their family members. As death approaches, a patient's symptoms may require more aggressive palliation in the form of end of life care, wherein helping the patients and their families to understand the nature of illness and prognosis and providing ways to manage the various medical and social issues at hand becomes a crucial aspect. Literature increasingly reports about the importance of palliative and end of life care research. The advances in the field have enriched the understanding of the burden of life-limiting diseases in patients as well as their families and even treating clinicians, documenting the successful role of end of life care in improving patient and family outcomes and reducing the costs of care.

Introduction

The art of living well and dying well are one.
~ Epicurus

The majority of global deaths are now attributable to non-communicable diseases,[1] of which cancer is expected to surpass cardiovascular diseases as the leading cause of death. There will be an estimated 18.1 million new cancer cases (17.0 million excluding non-melanoma skin cancer) and 9.6 million cancer

deaths (9.5 million excluding non-melanoma skin cancer) in 2018 as per Global Cancer Statistics 2018.[2] At different stages of the disease, a significant proportion of individuals with cancer will develop mental disorders, primarily common mental disorders.[3] Recent meta-analyses conclude that approximately one-third of persons with cancer in acute care hospitals are affected by common mental disorders.[4]

With the onset of cancer, there is a direct association of increase in psychiatric morbidity with the level of disability, advanced illness and pain, the biological effects of the malignancy, side effects of certain chemo-therapeutic drugs, grief about current and anticipated losses, mutilation, and fear of death.[5] Therefore, accurate and timely assessment followed by appropriate treatment of mental health issues will improve the quality of life, reduce adverse effects on cancer course, decrease the length of hospital stay, enhance treatment adherence and efficacy, and possibly improve prognosis and survival.[6]

Palliative care vis-a-vis end of life care

Palliative care approach improves the quality of life (QoL) of patients and their families facing the problems associated with a life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems including physical, psychosocial and spiritual ones. It is more expansive in its goals and care in early stages of many life-threatening diseases.[7]

People are 'approaching the end of life (EoL)' when they are likely to die within the next 12 months.[7] This includes people whose death is imminent (expected within a few hours or days) and those with: (a) advanced, progressive, incurable conditions, (b) general frailty and co-existing conditions that mean they are expected to die within 12 months, (c) existing conditions if they are at risk of dying from sudden acute crisis in their conditions, and (d) life threatening acute conditions caused by sudden catastrophic events.[7]

Approach towards end of life care

When providing for EoL care, it is planned to achieve certain straight-forward goals,[8] which include:

- Achieving a "good death" for any person who is dying, irrespective of the situation, place, diagnosis, or duration of illness
- Emphasis on quality-of-life and quality of death
- Acknowledge that good EoL care and good, peaceful, and dignified death is a basic human right that must be guaranteed to every individual.

Good death will depend upon whether people are dying badly or well. It is more than being free of pain. The authors of the final report on *The Future of Health and Care of Older People* identified 12 principles of a good death,[8,9] which are:

- To know when death is coming, and to understand what can be expected
- To be able to retain control of what happens
- To be afforded dignity and privacy
- To have control over pain relief and other symptom control
- To have choice and control over where death occurs
- To have access to information and expertise of whatever kind is necessary
- To have access to any spiritual or emotional support required
- To have access to hospice care in any location
- To have control over who is present and who shares the end
- To be able to issue advance directives, ensuring that one's wishes are respected
- To have time to say goodbye, and control the timing
- Not to have life prolonged pointlessly

There are various steps described to assess and manage EoL issues in form of identifying, assessing, planning, providing, reassessing and reflection. Identification and assessment are the initial steps for the end of life care.

Assessment of mental health issues

Assessment of mental health issues in EoL care requires good and effective communication which can never be neutral; it is either effective or ineffective, stress-relieving or stress-inducing. Active listening is the key to effective communication. The methods to enhance active listening are (1) Greeting and seating in a comfortable position, (2) Asking open-ended questions, (3) Encourage discussion, (4) Maintain eye contact, (5) Tolerate brief silence, (6) Avoid unnecessary interruption, (7) Show them they are listened well - summarize and prioritize the agenda, empathize and give realistic hope.[10] When assessing the state of mind, spiritual assessment is as important as psychological assessment.

A) *Psychological Assessment* - The key to psychological assessment is finding out what the patient wants to know. Gently assessing how the patients feel about their disease and situation can shed light on their needs and distress. The cause of psychological distress could be: a) fear associated with physical symptoms, b) lack of knowledge and clarity of diagnosis and the suspicion that care-givers are hiding details, c) unfinished business to attend, and d) anxiety about how their loved ones will cope after their death.[11]

B) *Spiritual Assessment* - Spirituality is a personalized system of beliefs through which one understands meaning and purpose in life.[12] Many spiritual assessment tools are available such as FICA (Faith, Importance, Community, Address) developed by Christina Puchalski, and SPIRIT (Spiritual belief system, Personal spirituality, Integration in spiritual community, Ritualized practices, Implication for Medicare, Terminal events planning).

A plethora of mental health issues exist at EoL. Proper assessment of such issues will make it easier to address them for the betterment of QoL. Some of these are discussed as below:

Denial- It is a coping mechanism which helps to avoid painful thoughts and feelings which are difficult to be dealt with. This is common in patients suffering from cancer and it implies that they are not mentally prepared to handle the news. It may have a positive effect when applied in the first phase of coping after diagnosis, because it reduces anxiety. The negative effects of denial are varied and may interfere with getting treatment (e.g., delay in going to the doctor, not showing up for follow-ups, noncompliance), may disrupt the process of assimilating the stressful event, may affect adversely interpersonal relations, and constitute a cumulative stressor depressing even immunocompetence.[13] The Mental Adjustment to Cancer (MAC) scale and the shorter Mini-MAC version have been particularly used to identify specific styles of coping including denial/ avoidance, fighting spirit, fatalism, helplessn ess/ hopelessness and anxious preoccupation.[14]

Anxiety and Depression - There is high prevalence of anxiety and depression in patients with cancer especially in EoL care. The prevalence of depression, in particular, ranges from 1.5% to over 53%.[4] Two stem questions derived from the Patient Health Questionnaire (PHQ-2) and the Beck Depression Inventory (BDl-11) were considered acceptable by the Depression in Cancer Consensus Group, which reported on diagnostic validity studies involving at least 19 tools designed to help clinicians identify depression in cancer settings.[15]

Hospital Anxiety and Depression Scale (RADS) is a suitable tool for initial screening for anxiety and depression but it cannot be utilized as a diagnostic instrument. The State-Trait Anxiety Inventory (STAI), the Generalized Anxiety Disorder scale (GAD-7), the GAD for DSM, and Fear of Disease Progression Scale have been reported as tools to be applied in cancer settings, although their acceptability is also reported to be modest).[14]

Psychological distress - The National Comprehensive Cancer Network (NCCN), 2003 is a multidisciplinary team that developed a specific instrument, the Distress Thermometer (DT), as a short screening instrument to routinely and rapidly assess distress in cancer settings.[16] Edmonton Symptom Assessment Scale (ESAS) is also widely used.[14]

Insomnia - Sleep disturbance is common in cancer patients and may have detrimental effects on quality of life. Insomnia is at least twice as high in cancer patients compared to general population. Bergen Insomnia Scale and Epworth Sleepiness Scale are good tools for initial screening for insomnia. Polysomnography is recommended in selected cases.[17]

Delirium - The incidence of delirium in advanced cancer patients has been reported as varying greatly, with up to 88% of patients developing delirium in the last weeks to hours of life.[18] The Confusion Assessment Method (CAM) is a copyrighted instrument and one of the most widely used diagnostic instruments for clinical and research purposes. Other instruments could be Mini-Mental State Examination (MMSE), Addenbrooke's Cognitive Assessment - Revised (ACE-R), Abbreviated Mental Test Score (AMTS), and 6-item cognitive impairment test.[14]

Management of mental health issues

The management of mental health issues in EoL care includes both pharmacological and non-pharmacological approaches. But breaking the bad news holds the foremost importance.

Breaking bad news - The SPIKES Protocol is a common template for breaking bad news).[19] The acronym SPIKES - Setting up, Perception, Invitation, Knowledge, Emotions with Empathy, and Strategy or Summary is designed to help healthcare professionals to accomplish the following while breaking bad news:

1. Establish an appropriate setting.
2. Check the patient's perception of the situation prompting the news regarding the illness or test results.

3. Determine the amount of information known or how much information is desired.
4. Know the medical facts and their implication before initiating the conversation.
5. Explore the emotions raised during the interview.
6. Respond with empathy.
7. Establish a strategy for support.

Pharmacological Management

Pharmacotherapy for anxiety includes benzodiazepines which are short term agents, and antidepressants in severe cases. Medications with short half-life and those that are least affected by drug interaction and medical comorbidities such as lorazepam, alprazolam, and oxazepam, are preferred. Care should be exercised as short acting benzodiazepine have higher risk of dependence and end dose failure. Clonazepam is a useful alternative in such patients and may help to wean off patients on short acting benzodiazepines. Buspirone is a non-benzodiazepine anxiolytic that is preferred in individuals in whom benzodiazepines are contraindicated. The delay in onset of action may limit its usefulness.

Pharmacological interventions are the mainstay of management for patients with moderate to severe levels of depression, while modified electroconvulsive therapy may be indicated in severe cases. Antidepressants are safe and effective in alleviating the symptoms of depression, improve compliance to treatment of cancer and facilitate early functional recovery.[20] Profile of depressive symptoms and current medical problems are the most important factors that influence the choice of antidepressants.

Patients who experience psychomotor retardation are prescribed medications which are activating or those that have the least sedating effects (SSRI, SNRI, stimulants). Sedating antidepressants like tricyclics, mirtazapine or trazodone are better for patients with sleep disturbances and agitation. Some side effects which are troublesome like increase in appetite and weight gain can be of benefit in patients with cancer cachexia. Co-analgesic property of TCAs and SSRIs can potentiate the effects of opioid analgesics and offer enhanced pain relief.

Delirium is managed by evaluation for possible underlying causes, correction of those factors, and management of symptoms. Special attention is paid to fluid and electrolyte balance, nutrition, and vitamins. Agitation and insomnia are common and managed with neuroleptics as benzodiazepines can

worsen delirium. Haloperidol in lower dose range (1 mg - 3mg) is the drug of choice for treatment of delirium, administered in divided doses and titrated according to severity of symptoms. Second generation antipsychotics are effective alternatives at low doses (Aripiprazole - 5 to 15 mg, Olanzapine - 2.5 to 10 mg, Risperidone - 1 to 2 mg).[21]

Non-Pharmacological Management

Psychosocial interventions are used to help individuals, families, and groups to improve coping skills through educational, behavioral, or psycho-dynamic approaches.

Cognitive Behavioral Therapy (CBT)

Cognitive-behavioral interventions enable the patient to direct their attention to treatment and illness related factors. Better control over and modification of behaviour can improve engagement with family members and can facilitate approach to treatment team with a more positive outlook.

Supportive Psychotherapy

Supportive psychotherapy is the integration of behavioral therapy, cognitive behavior therapy, family therapy, group therapy, and psychodynamic therapy. The therapist emphasizes past strengths and coping strategies. Patients have improvement in outlook of life and have more acceptance of the inevitable outcome.

Behavioral Interventions

Tailored CBT modules are available to address anxiety issues specific to cancer. Patients with cancer may need additional care to address their concerns about pain, disability and death, functional limitation and change in lifestyle to accommodate treatment.

Support groups

Support groups attached with hospitals and other professional organizations use educational, supportive, or cognitive-behavioral methods while those run by patients and lay persons focus upon education, practical advice and modeling.

A Cochrane review concluded that the effect of psychosocial interventions is extremely variable and dependent upon the professional administering the therapy. Their effects on QoL are minimal but they serve as a useful addition to other interventions in EoL care.[22] CBT for Insomnia (CBT-I) can help patients with cancer who have insomnia and fatigue.[23]

Conclusion

Death and dying affect not just the individual who is dying, but also the family members and even the treating clinician. Early identification and recognition of EoL care choices heavily influence the QoL of the individual experiencing the dying process. Because clinicians are often at the forefront of communicating and arranging EoL care, they need a clearer understanding of EoL care choices and how to communicate these choices to patients and families. Comprehensive assessment and treatment of physical, psychosocial, and spiritual symptoms are necessary to help in attaining a good death.

References

I. World Health Organization. Global Health Observatory. Geneva: World Health Organization; 2018. (Available from: who.int/gho/database/en/ (last accessed Jan 21, 2019).

2. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries - Bray - 2018 - CA: A Cancer Journal for Clinicians - Wiley Online Library [Internet]. Available from: https: //onlinelibrary.wiley.com/doi/full/10.3322/caac.21492 (last accessed Jan 23, 2019).

3. Miovic M, Block S. Psychiatric disorders in advanced cancer. Cancer. 2007; 110:1665 - 1676.

4. Singer S, Das-Munshi J, Brahler E. Prevalence of mental health conditions in cancer patients in acute care- a meta-analysis. Ann Oncol. 2010; 21:925- 30.

5. Meyerowitz, BE. Oh S. Handbook of Behavioral Science and Cancer: Psychosocial response to cancer diagnosis and treatment. Washington DC: American Psychological Association; 2009.

6. Institute of Medicine. Cancer Care for the Whole Patient: Meeting the psychosocial health needs. Washington DC: 2008.

7. The International Collaborative for Best Care for the Dying Person Available at: www.mcpci l.org.uk/media /33890/international (last accessed on Jan 18, 2019).

8. Macaden SC, Salins N, Muckaden M, Kulkarni P, Joad A, Nirabhawane V, et al. End of life care policy for the dying: Consensus position statement of Indian Association of Palliative Care. Ind J Pall Care 2014; 20:171-81.

9. Debate of the Age Health and Care Study Group. The future of health and care of older people: the best is yet to come. London: Age Concern 1999.

10. Myatra SN, Salins N, Iyer S, Macaden SC, Divatia N, Muckaden M, et al. End-of-life care policy: An integrated care plan for the dying. Indian Crit Care Med 2014;18:615-35.

11. Adam J. The last 48 hours, In: (Eds) M Fallon and BO' Neill eds ABC of Palliative Care. 2001 1st edn, Tavistock Square, London. Section 11;39-42.

12. Dom H. Spiritual care, need and pain, recognition and response. Eur J Pall Care. 1999; 6:87-90.

13. Kreittler S. Denial in cancer patients. Cancer Invest 1999;17:514-34.

14. Grassi L, Carusol R, Sabato S, Massarenti S, Nanni MG and the Uni Fe Psychiatry Working Group Co-authors. Psychosocial screening and assessment in oncology and palliative care settings. Front Psychol 2015; 5:1485.

15. Mitchell AJ, Meader N, Davies E, Clover C, Crater G, Loscalzo M, et al. Meta-analysis of screening and case finding tools for depression in cancer: evidence-based recommendations for clinical practice on behalf of the DC consensus group. J Affect Disord 2012;140:149-60.

16. Holland JC. Preliminary guidelines for the treatment of distress. Oncology 1997; 11:109-114.

17. Howell D, Oliver TK, Keller-Olaman S, Davidson JR, Samuels C, et al. Sleep disturbance in adults with cancer: a systematic review of evidence for best practices in assessment and management for clinical practice. Ann Oncol 2014;25:791-800.

18. Hosie A, Davidson PM, Agar M et al. Delirium prevalence, incidence, and implications for screening in specialist palliative care inpatient settings: a systematic review. Palliat Med 2013;27:486- 98.

19. Mcfarlane J, Riggins J, Smith TJ. SPIKES: a six-step protocol for delivering bad news about the cost of medical care. J Clin Oncol 2008; 26:4200-04.

20. Grassi L, Nanni MG, Rodin G, Li M, Caruso R. The use of antidepressants in oncology: a review and practical tips for oncologists. Ann Oncol 2018; 29:101-11.

21. Bush SH, Lawlor PG, Ryan K, Centeno C, Lucchesi M, Kanji S, et al. Delirium in adult cancer patients: ESMO Clinical Practice Guidelines. Ann Oncol 2018; 29(Supplement_4): ivl43-iv165.

22. Galway K, Black A, Cantwell M, Cardwell CR, Mills M, Donnelly M. Psychosocial interventions to improve quality of life and emotional wellbeing for recently diagnosed cancer patients. Cochrane Database Syst Rev 2012;11:CD007064.

23. Heckler CE, Garland SN, Peoples AR, Perlis ML, Shayne M, Morrow GR, et al. Cognitive behavioral therapy for insomnia, but not armodafinil, improves fatigue in cancer survivors with insomnia: a randomized placebo-controlled trial. Support Care Cancer 2016;24:2059-66.

Chapter 11

Implementing Liaison Psychiatry in Community Setting: Indian perspective

Mukesh Kumar Swami, Naresh Nebhinani
Department of Psychiatry, All India Institute of Medical Sciences, Jodhpur-342005

Abstract

Consultation liaison (CL) psychiatry is an essential sub-specialty for comprehensive care in general hospital services. Though adoption of CL psychiatry services at higher centres is *still far from ideal, its rollout in community setting* is *desirable. This chapter discusses various models of CL psychiatry in primary care and community setting. Despite presence of barriers, liaison psychiatry can be implemented in Indian setting as evident from experience under 'Manochaitanya programme (MCP)' and District Mental Health Programme (DMHP). Development of tele-psychiatry is another feasible alternative. A flexible approach is required keeping in mind existing pathways to care and available resources with a clear project plan.*

Consultation liaison (CL) psychiatry has an important role in providing comprehensive care to patients in general hospital setting and implementing bio-psycho-social model of care. Though general hospital psychiatry units (GHPU) are working in Indian setting since many decades, there is a limited integration with other disciplines. Despite availability, GHPU services are sparingly utilised for common mental disorders at most places, leading to inadequate treatment and infrequent recognition of common psychiatric co-morbidities. Stigma, as well as inadequate sensitisation of other specialists about mental disorders, is often a contributory factor. To fill this gap, propagating CL psychiatry is considered to be an appropriate step, with the aim to enhance clinical, research and teaching activities of psychiatrists in the non-psychiatric setting. Expansion of CL psychiatry is likely to contribute significantly to reduction of stigma, as well as to sensitise other specialists.

CL Psychiatry services in India generally adopt a consultation model, in which consultation is limited to receipt of referral from other specialists. At some places, attempts to run integrated speciality clinics like pain clinic also exist.

Model of CL psychiatry adopted in tertiary care settings is usually not applicable at community or primary care level, where a collaborative model of integrating mental health in primary health care may be more appropriate. The WHO also advocates integrated care as the Innovative Care for Chronic Conditions Framework (ICCCF), which calls for integration of care for people with multiple morbidities and integration of mental health in primary and routine health-care platforms for chronic conditions.[1]

Various levels for such collaboration have been proposed, like involving family physicians, psychiatrists and subsequently expanding to involve nurses, psychologists, social workers, occupational therapists and other service providers. Some services also aim for specific subgroups like the elderly and the marginalized individuals with limited access to services. Collaboration may vary from high level (shared assessment, treatment planning and management by multidisciplinary team with regular discussion and review regarding services) to low level (minimal face-to-face contact).[2]

There are several gaps in provision of CL psychiatry at tertiary care centres in India and it is yet to be adopted in true spirit. The way forward to ensure wider acceptance can be introduction of CL psychiatry services at the community level. Though the model of CL psychiatry is still not fully adopted even in resource rich western countries in general hospital setting,[3] there are ongoing attempts to incorporate CL psychiatry at primary care and community level. There is very limited data regarding effectiveness of CL psychiatry services at primary care level. In a meta-analysis assessing effectiveness of CL psychiatry in management of depression at primary care, no significant advantage was observed, and need was emphasised on exploring ways to improve efficacy of such interventions.[4] Other researchers however report efficacy and cost effectiveness of collaborative care approach.[5]

Need for liaison psychiatry at community level

According to the National Mental Health Survey (NMHS) of India, common mental health problems like anxiety disorders and depression contribute substantially to major burden of psychiatric illness).[6] Most of these patients have their first encounter with a primary care physician. Medically unexplained physical symptoms, chronic medical conditions and perinatal mental health have been identified as three key areas where community-based CL psychiatric services can contribute significantly.[7] A meta-analysis has supported efficacy of interventions at primary care level, especially for somatoform disorders and for reduction of health care utilization).[8]

An underlying psychiatric condition is often in the background when

patients present with multiple somatic symptoms or unexplained physical symptoms. Similarly, chronic medical conditions are also invariably associated with mental health issues or psychosocial factors. Addressing these factors through collaborative care is likely to improve prognosis. This complex interplay of physical and psychiatric disorders necessitates adoption of collaborative care to improve outcome and provide economic benefit.[2] Such integration can also help in reducing morbidity, as it is likely to facilitate early contact with psychiatric services, thus reducing duration of untreated illnesses.[2] In addition, this will be helpful in reducing burden on higher centres leading to improved functioning and quality of care.

Integrated care is also likely to improve physical health of persons suffering from severe mental illnesses (SMI), as their medical care is often neglected. This will improve outcome in these patients and also reduce economic burden. Studies has shown efficacy of integration at primary care in addressing physical health care needs of patients with SMIs.[9]

Establishment of collaborative care can also provide an opportunity to ensure follow-up of patients seen first time by CL psychiatry team at higher centres as they are known to have high dropout rate.[10] Thus continuity of care can be ensured.

Finally, such collaborative services are likely to make people more comfortable in communicating their mental health issues, thus reducing stigma, a major contributor to untreated psychiatric morbidity.[11]

Experience and models in Western countries

There are examples of successful collaboration from the western countries like USA, Canada and UK.[5,12] This demonstrates benefits in the form of increased coverage of mental health care and high satisfaction of patients, physicians and psychiatrists.[13] But it should be kept in mind that success of such programmes largely depends on adequacy of resources, especially manpower and financial allocation.

Limitations in Indian setting

In Indian setting, adopting a model of collaborative care akin to the western model is not practically possible in the current scenario. Lack of human resources is probably the most important barrier. Apart from a dearth of psychiatrists, there is shortage of allied mental health professionals like psychologists and social workers).[14] Another important barrier is lack of adequate data regarding psychiatric morbidity and comorbidities at primary care level, which is essential to make a case for adequate allocation of funds for starting any programme.

Primary care physicians (PCPs) in Indian health system are usually burdened with several administrative responsibilities apart from usual clinical duties. They are unlikely to welcome any additional role assignment. Medico-legal issues may further increase reluctance among PCPs. Especially after implementation of the Mental Healthcare Act 2017, many doctors in the primary care may not be willing to engage in the required framework to provide mental health service.

Possible models in India

Component of District Mental Health Program (DMHP): Though universal implementation of DMHP was envisioned, it could not be achieved due to limitations of human resources. In addition, financial resources, lack of community participation and inadequate evaluation system are cited as important reasons. Still, DMHP has improved service delivery at many places.[15] Delivering CL psychiatry services through DMHP appears an appropriate strategy, once universal coverage of DMHP is achieved.

'Manochaitanya programme (MCP)' aimed at integrating mental health at primary care level is first of its kind state initiative. The programme includes treatment of psychiatric disorders by primary care physicians, and referral of only the difficult-to-treat cases to higher centres. In addition, there is provision of availability of psychiatrist at sub-district hospital once a month to deal with referred cases. Though the programme needs refinement at several levels, it signifies an important step in right direction.[16]

Electronic consultation at primary care level has also shown some initial promise and needs to be evaluated further for its feasibility and utility as an approach to provide CL psychiatry services at community level in areas with deficit human resources.[17] Tele-psychiatry uses videoconferencing to conduct psychiatric consultations in real-time (synchronous) . The PCP can also record patient information and electronically send to the psychiatrist to review at a later time (asynchronous).

E-Consults are asynchronous systems in which there is a web-based communication between PCP and psychiatrist. It minimises technical hurdles for real time interaction. In E-Consult, PCPs submit their queries and cases to specialists, who offer recommendations in a scheduled manner, thus enabling feedback and support.[18,19] Similar service has been started by virtual knowledge network (VKN) NIMHANS under Project ECHO (Extension for Community Healthcare Outcomes), where once a week support is provided in management of non-emergency addiction related cases. Similar model can be adopted and tested, where teaching institutions work as mentor to provide

support to primary care centres in establishing and running mental health services.

In different settings, what kind of support is required for the PCPs can be ascertained: whether educative, collaborative or directive. There should be development of structured supervision framework in supportive environment, so that the capacity of PCPs to conceptualize mental health issues of patients increases by enhancing knowledge and treatment skills. It also requires regular visits of the psychiatrist to primary care.[20]

It should be understood that for development of collaborative care, we need to understand the population, existing pathways to care and resources available. This will provide an idea about feasibility of CL psychiatry services ranging from minimal to fully integrated. For adequate delivery of such models, there should be a clear project plan with provision of record keeping, regular monitoring, evaluation and accountability. There is a need to formulate management protocols and guidelines for primary care level, as existing protocols might be difficult to implement due to various operational issues. Furthermore, continued education and training is an essential part of collaborative care.

References

1. Thornicroft G, Ahuja S, Barber S, Chisholm D, Collins PY, Docrat S et al. Integrated care for people with long-term mental and physical health conditions in low-income and middle-income countries. Lancet Psychiatry 2019;6:174-186.

2. Kisely S, Campbell LA. Taking consultation-liaison psychiatry into primary care. Int J Psychiatry Med 2007; 37:383-391.

3. Naidu S, Bolton J, Smith J. London's liaison psychiatry services: survey of service provision. Br J Psych Bull 2015; 39:65-9.

4. Cape J, Whittington C, Bower P. What is the role of consultation-liaison psychiatry in the management of depression in primary care? A systematic review and meta-analysis. Gen Hosp Psychiatry 2010;32:246-54.

5. Ivbijaro GO, EnumY, Khan AA, Lam SS, Gabzdyl A. Collaborative care: models for treatment of patients with complex medical-psychiatric conditions. Curr Psychiatry Rep 2014; 16:506.

6. Gururaj G, Varghese M, Benegal V, et al. National Mental Health Survey

of India, 2015- 16: Summary Bengaluru: National Institute of Mental Health and Neurosciences 2016.

7. Parsonage M, Fossey M, Tutty C. Liaison Psychiatry in the Modern NHS. London: Centre for Mental Health 2012.

8. van der Feltz-Cornelis CM, Van Os TW, Van Marwijk HW, et al. Effect of psychiatric consultation models in primary care: a systematic review and meta-analysis of randomized clinical trials. J Psychosom Res 201O; 68:521-533.

9. Druss BG, Rohrbaugh RM, Levinson CM, Rosenheck RA. Integrated medical care for patients with serious psychiatric illness: a randomized trial. Arch Gen Psychiatry 2001; 58:861-8.

10. Agyapong VI, Rogers C, Machale S, Cotter D. Factors predicting adherence with psychiatric follow-up appointments for patients assessed by the liaison psychiatric team in the emergency department. Int J Psychiatry Med 2010; 40:217-28.

11. Shim R, Rust G. Primary care, behavioral health, and public health: partners in reducing mental health stigma. Am J Public Health 2013; 103:774-6.

12. Craven MA, Bland R. Better practices in collaborative mental health care: an analysis of the evidence base. Can J Psychiatry 2006; 51(6 Suppl 1):7S- 72S.

13. Kates N, Crustolo AM, Farrar S, Nikolaou L, Ackerman S, Brown S. Mental health care and nutrition. Integrating specialist services into primary care. Can Fam Phys 2002; 48:1898-1903.

14. WHO. Mental health atlas 2017. Geneva: World Health Organization, 2018.

15. Gupta S, Sagar R. National Mental Health Programme-Optimism and Caution: A narrative review. Indian J Psychol Med 2018;40:509-516.

16. Manjunatha N, Singh G, Chaturvedi SK. Manochaitanya programme for better utilization of primary health centres. Indian J Med Res. 2017; 145:163-165.

17. Archibald D, Stratton J, Liddy C, Grant RE, Green D, Keely EJ. Evaluation of an electronic consultation service in psychiatry for primary care providers. BMC Psychiatry 2018;18:119.

18. Yellowlees PM, Odor A, Parish MB, Iosif AM, Haught K, Hilty D. A feasibility study of the use of asynchronous telepsychiatry for psychiatric consultations. Psychiatr Serv 2010; 61:838-40.

19. Butler TN, Yellowlees P. Cost analysis of store-and-forward telepsychiatry as a consultation model for primary care. Telemed e-Health 2012; 18:74-7.

20. Blashki G, Selzer R, Judd F, Hodgins G, Ciechomski L. Primary care psychiatry: taking consultation-liaison psychiatry to the community. Australas Psychiatry 2005; 13:302-6.

Chapter 12

Psychosocial issues in Transplant Surgery

Gagan Hans
Department of Psychiatry, All India Institute of Medical Sciences, New Delhi-110029

Abstract

Organ transplantation is a very critical life-saving procedure for many patients with end-stage organ failure. However, despite latest state of the art surgical procedures, immunosuppressant drugs and after care, many patients either do not receive the organs for transplantation in the first place, or do not have favourable outcomes after receiving the donor organs. Psychosocial factors play an important part in the outcome at every stage of transplantation with many studies showing direct relationship with the survival rates of the patients. In addition, the process of psychological pre-evaluation before transplantation for choosing the recipients who can achieve best possible outcomes in view of organ shortage lacks standardisation at present. After surgery, there are many important issues like adherence to the medical regimen, financial stability, psychiatric disorders, and familial and social support which play an important role in the longevity of the graft and quality of life for the patient. There is a complex interplay of these factors which impacts all spheres of life of the patient including success of the grafted organ.

Introduction

Advances in the medical science have made organ transplantation a life-saving procedure for millions of patients worldwide suffering from end stage diseases. It is truly one of the greatest marvels of modern medical science. However, despite these advances many patients die each year waiting for transplants. This is mainly due to lack of adequate number of organ donations. In most parts of the world, there are long waiting lists of such potential recipients who have to wait for years before getting an organ transplant.[1] In India, the situation is particularly grim considering the fact that the deceased organ donations stand at 0.34 per million compared to 36 per million in Spain, 35 per million in Croatia and 27.02 per million in the United States of America. [2] This figure is particularly alarming considering the fact that approximately half a million people die each year in India waiting for organ transplants. [2]

The patients awaiting solid organ transplants can receive it from a living donor, though the percentage of these donations is comparatively less as compared to the number of patients who receive their transplants from the deceased.[3] The living organ transplants are usually seen if the donor is biologically related to the patient though this varies from country to country depending on the laws governing the solid organ transplantation. Organ transplantation results in significant improvement in the physical and social functioning of the recipients.

Psychosocial issues can arise in the management of these patients at multiple points in the [development trajectory of the disease to ultimately requiring the organ transplant for further survival] trajectory of development of disease to ultimate requirement of the organ transplant for further survival. Psychological disorders prevalent in the transplant recipients range from transient adjustment reaction to post traumatic stress disorder (PTSD) and depression. Major psychosocial problems are centred around themes like loss of relationships, difficulties with family role, loss of work, financial instability, compliance to immunosuppressants and continuing stress of possible organ rejection. All these factors are interrelated and can negatively impact each other.

Pre-transplantation

Stress starts with the diagnosis of the life-threatening illness or its progression to the end stage. These events have a major impact on the life of the patient and the family members.[4] As long as the patient is able to maintain the activities of independent living, occupational, social and familial responsibilities, there may not be appreciable changes in the patient, although this may be highly variable from patient to patient and is difficult to generalise. Co-morbid medical conditions in the patient are also important in addition to financial stability, and familial and social support at the time of crisis. This is a challenging time in the life of an individual as there is a pressing need to revise both short and long-term goals. Priorities change and it may be difficult to come to terms with a life-threatening disease. Often the relationships with the family members, colleagues and friends are strained in the face of new challenges. Various studies which have tried to find out the psychiatric morbidity in the patients awaiting transplantation have found high prevalence of anxiety and depressive disorders.[5] Overall, anxiety or depressive disorders are experienced by 25% of lung, 40% of liver and 50% of heart patients prior to transplantation.[6]

The patient may go through a mixture of heightened state of worrying about future, restlessness, hopelessness and depressive feelings, though many patients progress to develop a diagnosable psychiatric condition. Even when it

becomes clear to the patient and the family members that organ transplantation is vital for the survival of the patient, the uncertainty about the possible availability of the organ in time can be highly distressing for the patient. Then, even if it becomes available, there is stress of passing the pre-evaluation for transplant surgery, success of the transplant surgery, possibility of the acute rejection, use of immunosuppressants and their side effects.

Another major area of concern in the pre-transplant phase is substance abuse in the patients. Although it may appear a simple proposition at the outset, it is usually more complicated as many patients present for transplantation due to substance use in the first place, for example, patients of alcoholic liver cirrhosis.[7] Most transplant programmes take ongoing substance abuse into consideration while evaluating potential candidates for transplantation. Such patients are likely to have been using substances over a very long duration, and deaddiction in such patients may pose additional challenges because of limited number of drugs that can be used due to the end stage organ failure.

Pre-evaluation of Recipients

There are a lot of psychosocial issues in the pre-operative stage of the transplant surgery. It becomes imperative considering the limited availability of donor organs, so that the distribution of these organs is done in a fair manner. Thus, it is important to take into consideration the fact that patients, who are likely to achieve optimal outcomes by these transplants, are prioritized.[3] This is one of the most important criteria for patient selection in organ transplantation programmes worldwide because attempting to decrease the morbidity and mortality associated with organ transplant forms the core of most programmes).[8] Thus, pre-transplant psychological evaluation is very critical in identifying the appropriate transplant candidates.

Once the referral is made to the consultation-liaison team for evaluation of the potential recipient of the transplant, the evaluation is carried out to find out the relative psychological strengths and weaknesses of the patient and also to evaluate in case there is some absolute or relative contraindication to the transplantation. The evaluation starts by taking a comprehensive medical, social and psychological history of the patient. The information can also be obtained using various structured or semi-structured interview techniques).[9] Pre-transplant psychological assessment can also be done using several rating scales like the Stanford Integrated Psychosocial Assessment for Transplantation.[10]

However, it should be borne in mind that the goal of pre-evaluation is not to exclude the patients from transplantation but to recommend supportive or

therapeutic measures which upon successful completion make the patient eligible candidate for transplantation in due course of time.[11] Once an organ transplantation has been done successfully, it requires a lot of commitment from the patient to care for such a transplanted organ. This includes maintaining strict adherence to the immunosuppressive drugs, diagnostic tests, follow up with health services, and significant lifestyle and behaviour modifications. Inability on the part of the patient to adhere to any of these responsibilities can result in rejection of the transplanted graft, graft failure and subsequent death.[12]

There is no general consensus on the absolute or relative contraindications to the transplantation, and all cases should be evaluated on case by case basis, stressing on the modifiable risk factors in the patient which can make him/her a suitable candidate in due course of time. The association between the pre-transplant psychopathology and medical outcome of transplantation is not strongly correlated, with the literature suggesting that good outcomes can be achieved in such patients with specialized treatment, good social support and regular follow up.[13] However, in general the factors which are related with poor outcomes are weak or absent support systems, history of non-adherence, active psychiatric pathology, significant cognitive impairment, moderate/severe mental retardation, dementia and personality disorders with impulsivity.[14]

The pre-evaluation process can itself be a quite stressful process for the patients as they face the evaluation when there is a sense of uncertainty regarding the future.

Pre-evaluation of Donors

Living organ donation is becoming increasingly prevalent worldwide. Although there is lack of uniform protocols to evaluate the psychological suitability of such donors, there is no denying the fact that such evaluation is critical for ensuring favourable short-term and long-term outcomes for donors.[15] In many countries, it has become the favoured mode of transplantation, so it becomes more imperative that the psychosocial evaluation of donors is done in accordance with the law of the land governing such transplant procedures.[16] The living donations can range from those of biologically related individuals to completely unrelated individuals, varying from country to country. Another important consideration is the prevalence of illegal organ trafficking in a country where genetically related donations are preferred to curb the illegal harvesting and trafficking of organs. Organ transplant is tightly regulated in India under The Human Organs Transplant Act, 1994 with strict penalties for offenders.

The psychological assessment of the donors usually focuses on specific issues pertinent to the donation. The domains which are usually covered are donors' motives, informed decision making, voluntariness, ambivalence, expectations, cognitive status, competence, donor patient relationship, social support, familial issues, current and past psychiatric conditions, medications, coping, critical life events, substance use, financial issues and occupational risks of donation. [11] Various studies which have tried to study the effect of donation on the donors conclude that psychosocial and quality of life outcomes for donors are good to excellent in broad range of areas.[11]

The literature available at this point of time suggests that a group of the donors may be particularly prone to have poorer outcomes. These are the donors who are related to the patient but are not the first-degree relatives,[17] donors who are more ambivalent before the donations,[17] and "black sheep" donors (a term used for the donors who donate to compensate or repair past wrongs and/or to regain their position in the family).[18] Ambivalence before organ donation is an important prognostic factor for poorer outcomes, and if detected it indicates that either the organ donation should not be carried out at all, or it should be postponed until further deliberations and a significant period of watchful waiting.[19]

Peri-operative and Post-operative

Once the surgical procedure is carried out successfully, the ensuing period is critical for ensuring long-term survival of the graft. In addition to the usual complications associated with any major surgical procedure and anaesthesia, the patient has additional stress of graft failure, rejection and side effects with the introduction of the immunosuppressive therapy. Immunosuppressive drugs, especially corticosteroids can contribute to delirium or acute brain dysfunction.[20] The occurrence of post-surgical complications in the transplant patients is associated with longer hospital stay, higher mortality and increase in post-transplant complications.[21,22]

After the initial phase of hospitalisation, the patients have to make major changes in their life to adjust with the requirements of transplanted organ. Because of the vulnerable state post-transplant, the patients are vulnerable to develop infections, diabetes mellitus, hypertension, cardiovascular diseases and oncological diseases.[23] In the immediate post-transplant phase, severe neurotoxicity of the immunosuppressive drugs may itself mimic serious neuropsychiatric conditions.[20] Immunosuppressant medications have a lot of disabling side effects like mood swings , sexual and cognitive dysfunction, sleep disturbance, gastrointestinal dysfunction, tremors,

headache and hallucinations,[20] because of which the patient might become non-compliant without proper medical advice.

Following transplantation, major depression is experienced by 20% of kidney, 30% of liver, and 63% of heart transplantation cases. This usually results from a combination of factors like the stress associated with physical recovery, rehabilitation, adaptation to immunosuppressive medications and psychosocial role change.[3] The episodes of acute rejection in the patients can be managed effectively in the early postoperative period but management of chronic rejection may be difficult. Organ failure following the transplant can be due to multiple factors like recurrence of the pre-existing illness, chronic graft rejection reaction and other pre-existing medical comorbidities like hypertension, diabetes mellitus, etc.[11] The problem of non-compliance may further exacerbate pre-existing problems. In addition to the graft failure, cancer is also one of the leading causes of mortality in this subgroup of patient population.[23]

For the success of the transplanted organ, the importance of adherence to the medications cannot be underemphasised. Some reports suggest that poor adherence or non-adherence may be responsible for up to 25% deaths in the transplant recipients after the initial period of stabilization.[12] Non-adherence will invariably result in graft rejection, graft loss and death. However, there is a general consensus that non-adherence may be very difficult to define due to different definitions used by different authors.[24] Nonadherence means "not taking medications, missing medications, taking too much, not taking enough, wrong timing, wrong dose and/or wrong pill, but may also refer to missing appointments, not booking appointments, not doing blood work, not returning calls and/or refusal to follow the treatment regimen."[25] It is estimated that non-adherence to immunosuppressant medications contributes to approximately 50% of the late acute rejections and 15% of the graft losses.[26] It might be difficult to measure the non-adherence in clinical practice as majority of the physicians are dependent on patient's or family member's self-report. Many authors are of the belief that the best predictor for post-transplant non-adherence to medications by the patients is pre-operative adherence behavio ur.[27] Moreover, non-adherence may itself be a key pointer to the presence of psychopathology in patient and should be adequately evaluated.[9] In addition to other measures which can be used to improve the adherence, a good doctor-patient relationship built on mutual trust and shared decision making may go a long way in improving the treatment adherence of the transplant patients.

Over the years, the main outcome measure in the transplant patients has

shifted from mere survival rates to assessing the overall quality of life as measured by physical, emotional and social well-being of the patient. The ultimate goal is of restoring the patient to the premorbid level of functioning. Overall, some studies have found quality oflife to be a significant predictor of mortality and graft failure after transplantation.[28] There is evidence to suggest that the post-operative quality of life is significantly better compared to the pre-transplant quality of life in majority of the patients with significant gains in physical health. However, there are deficits in other major areas of functioning like sexual functions and occupational engagement which negatively impact the overall quality of life both in pre and post transplantation phases.[29] The quality of life of the transplant recipients is much better than the patients with similar end stage diseases but not receiving transplants, though it is lower as compared to the general population.[30]

Return to work is also an important consideration in the majority of the patients as it represents return to autonomy and self-sufficiency. There has been a wide variation in the percentage of patients who return towork, ranging from 18 to 86%.[31] The variation can be attributed to a number of factors like variable sociodemographic and clinical characteristics, follow-up duration, definition of work used, and assessment methods.[11] There is also variation with respect to the type of the transplants with highest percentage of people returning to work seen in the recipients of the kidney transplants followed by heart, liver and lung transplants in that order.[32] Other factors which favour return to work following the transplant surgery are younger age of the recipients, male sex, higher education, higher motivation for return to work and support from the employers.[33] There are also studies which suggest that the return to work is positively correlated with the quality of life of the patients, and there is less likelihood of developing psychological disorders in these patients. [34]

Conclusion

Psychosocial issues are very critical to the overall outcome of the transplant surgery with many factors playing a direct etiological role in the success or failure of the procedure. Although there is sufficient literature available in the area, the findings which can be generalised are relatively low. This is partially due to the nature of the study variables which can vary in different types of organ transplants. Also, there is lack of standardised tools and procedures for the pre-transplant evaluation of the potential donors and the recipients which can minimise post-transplant complications and ensure the success of the transplant. Thus, there is a need for conducting more prospective studies with relatively large sample sizes to further improve our understanding of the critical psychosocial factors in the transplant surgeries.

References

1. Wolfe R, Merion R, Roys E, Port F. Trends in organ donation and transplantation in the United States, 1998- 2007. Am J Transplant 2009; 9:869- 78.
2. Srivastava A, Mani A. Deceased organ donation and transplantation in India: Promises and challenges. Neurol India. 2018; 66:316-22.
3. Olbrisch ME, Benedict SM , Ashe K, & Levenson JL. Psychological assessment and care of organ transplant patients. J Consult Clin Psychol 2002; 70:771- 783.
4. Goodheart CD, & Lansing MH. Treating people with chronic disease: A psychological guide. Washington, DC: American Psychological Association; 1996.
5. Kelly P, Bart C, Craven J. Lung transplantation. In J Craven, GM Rodin (Eds.), Psychiatric aspects of organ transplantation (pp. 205- 223). New York: Oxford University Press; 1992.
6. Trumper A, Appleby L. Psychiatric morbidity in patients undergoing heart, heart and lung, or lung transplantation. J Psychosom Res 2001;50:103-5.
7. Singal AK, Chaha KS, Rasheed K, & Anand BS. Liver transplantation in alcoholic liver disease current status and controversies. World J Gastroenterol 2013;19:5953- 5963.
8. Butt, Z, Parikh ND, Skaro, AI, Ladner D, Cella D. Quality of life, risk assessment, and safety research in liver transplantation: New frontiers in health services and outcomes research. Curr Opin Organ Transplant 2012; 17:241- 247.
9. Kuntz K, Weinland SR, Butt Z. Psychosocial challenges in solid organ transplantation. J Clin Psychol Med Settings 2015;22:122-135.
10. Maldonado JR, Dubois HC, David EE, Sher Y, Lolak S, Dyal Jet al. The Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT): A new tool for the psychosocial evaluation of pre-transplant candidates. Psychosomatics 2012;53:123- 132.
11. Schulz KH, Kroencke S. Psychosocial challenges before and after organ transplantation. Transplant Res Risk Management 2015;8:45-58.
12. Laederach-Hofinann K, Bunzel B. Noncompliance in organ transplant recipients: A literature review. Gen Hosp Psychiatry 2000;22:412-424.
13. Rosenberger EM, Dew MA, Crone C, DiMartiniAF. Psychiatric disorders as risk factors for adverse medical outcomes after solid organ transplanta-

tion. Curr Opin Organ Transplant 2012;17:188- 192.

14. Jowsey SG, Taylor ML, Schneekloth TD, Clark MM. Psychosocial challenges in transplantation. J Psychiatr Pract 2001; 7:404-414.

15. Duerinckx N, Timmerman L, Van Gogh J, Van Busschbach J, Ismail SY, Massey EK et al. ELPAT Psychological Care for Living Donors and Recipients Working Group. Predonation psychosocial evaluation ofliving kidney and liver donor candidates: a systematic literature review. Transpl Int 2014;27:2- 18.

16. Delanaye P, Weekers L, Dubois BE, Cavalier E, Detry O, Squifllet JP et al. Outcome of the living kidney donor. Nephrol Dial Transplant 2012;27:41- 50.

17. Simmons RG, Anderson CR. Related donors and recipients: five to nine years post-transplant. Transplant Proc 1982;14:9-12.

18. Simmons RG, Klein SD, Simmons RL. Gift of Life: The social and psychological impact of organ transplantation. NY: Wiley 1977. Reprinted with additions, Brunswick, NJ: Transaction Books 1987.

19. Surman OS, Fukunishi I, Allen T, Hertl M. Live organ donation: social context, clinical encounter, and the psychology of communication. Psychosomatics 2005;46:1-6.

20. DiMartini A, Crone C, Fireman M, Dew MA. Psychiatric aspects of organ transplantation in critical care. Crit Care Clin 2008;24:949- 981.

21. Lescot T, Karvellas CJ, Chaudhury P, Tchervenkov J, Paraskevas S, Barkun J et al. Postoperative delirium in the intensive care unit predicts worse outcomes in liver transplant recipients. Can J Gastroenterol 2013; 27:207- 212.

22. SmithPJ, Rivelli SK, Waters AM, Hoyle A, DurheimMT, Reynolds JM et al. Delirium affects length of hospital stay after lung transplantation. J Crit Care 2015;30:126- 129.

23. Aberg F, Isoniemi H, Hockerstedt K. Long-term results of liver transplantation. Scand J Surg 2011;100:14-21.

24. Denhaerynck K, Dobbels F, Cleemput I, Desmyttere A, Schafer-Keller P, Schaub S et al. Prevalence, consequences, and determinants of non-adherence in adult renal transplant patients: A literature review. Transpl Int 2005;18:1121-1133.

25. Ortega F, Diaz-Corte C, Valdes C. Adherence to immune-suppressor medication in renal transplanted patients. World J Clin Urol 2015; 4:27-37.

26. De Bleser L, Matteson M, Dobbels F, Russell C, De Geest S. Interventions to improve medication-adherence after transplantation: A systematic review. Transpl Int. 2009;22:780- 797.

27. Dobbels F, Vanhaecke J, Dupont L, Nevens F, Verleden G, Pirenne J et al. Pretransplant predictors of posttransplant adherence and clinical outcome: an evidence base for pretransplant psychosocial screening. Transplantation. 2009; 87:1497- 1504.

28. Griva K, Davenport A, Newman SP. Health-related quality of life and long-term survival and graft failure in kidney transplantation: A 12-year follow-up study. Transplantation 2013;95:740- 749.

29. Burra P, De Bona M. Quality of life following organ transplantation. Transpl Int 2007;20:397-409.

30. Schulz KH, Kraft S, Ewers H, Wein C, Kroencke S, Koch U. Lebensqualitiit nach Organtransplantation.[Quality of life after organ transplantation]. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2002; 45:782-794.

31. Paris W, White-Williams C. Social adaptation after cardiothoracic transplantation: a review of the literature. J Cardiovasc Nurs 2005;20(5 Suppl):S6 7- S73.

32. De Baere C, Delva D, Kloeck A, Remans K, Vanrenterghem Y, Verleden G et al. Return to work and social participation: does type of organ transplantation matter? Transplantation 2010; 89:1009-1015.

33. Paris W, White-Williams C. Social adaptation after cardiothoracic transplantation: a review of the literature. J Cardiovasc Nurs 2005; 20(5 Suppl):S67- S73.

34. Chisholm-Burns MA, Erickson SR, Spivey CA, Kaplan B. Health-related quality of life and employment among renal transplant recipients. Clin Transplant 2012;26:411-417.

Chapter 13

Consultation Liaison Addiction Psychiatry: An Evolving Discipline

Ravindra Rao, Aishwariya Brigit George, Rakesh Kumar Chadda
Department of Psychiatry & National Drug Dependence Treatment Centre, All India Institute of Medical Sciences, New Delhi-II 0029

Abstract

A substantial number of patients admitted to different speciality settings in general hospitals suffer from substance use disorders (SUDs). Psychoactive substances are known to cause complications in many spheres of an individual users' life. Often, physical problems may be the primary reason for contact of an individual with a healthcare provider. We conducted a review of literature on consultation liaison (CL) in addiction by performing a search through search engines such as PubMed and Google Scholar using key-words appropriate to the topic, and scanned relevant publications. The results show that SUDs form a substantial proportion of referrals to CL Psychiatry services. Further, there is unequivocal evidence that SUDs in patients admitted for medical problems are associated with adverse outcome of their medical problems, including adherence to the medicines prescribed for their medical illnesses. The practice of addiction treatment services in people with medical illnesses is complicated by altered drug metabolism, confounding presentations and ethical issues. A lack of research on these topics in India indicates that this area is unduly neglected, despite being of public health relevance. There is an urgent need to improve CL Psychiatry services for SUDs in medical settings in India, and to bridge the treatment gap.

Introduction

Consultation-liaison (CL) addiction psychiatry can be described as a division of CL psychiatry which deals exclusively with the management of substance use disorders (SUDs) in patients admitted with various medical problems in general hospital settings. CL addiction psychiatry is an unrecognised field which has significant potential considering that a substantial number of patients in various medical and surgical units suffer from SUDs and related complications,

which sometimes may not even be recognised. In this background, there is also need to sensitise the non-psychiatric clinicians to be vigilant about SUDs and associated problems in their patients. The National Drug Dependence Treatment Centre (NDDTC) at the All India Institute of Medical Sciences, New Delhi has recently taken initiative to start exclusive CL services in addiction psychiatry. The scope of CL addiction psychiatry includes not only identification and management of SUDs in non-psychiatric parts of a hospital, but also liaising with the primary clinical team and sensitising them to the problems of SUDs and following an integrated approach towards treatment planning.

SUDs are associated with serious health issues and also impose substantial burden on the affected individuals and their families. There are also significant costs to the society including lost productivity, crime and lawlessness, healthcare costs, and various negative social consequences. According to the global estimates, there are two billion alcohol users, 1.3 billion tobacco or nicotine smokers and 185 million illicit drug users. Illicit drug dependence directly accounted for 20.0 million Disability Adjusted Life Years (DALYs) in 2010, accounting for 0.8% of all DALYs globally.[1] Psychoactive substances are known to cause complications in many spheres of an individual user's life. This includes various physical problems which may require management in a general hospital setting. Often, physical problems may be the initial reason of contact for the individual with a healthcare provider. Co-occurring alcohol and drug use disorders in patients presenting to general hospitals are known to predict readmission for health conditions and higher need for emergency care, especially if untreated.[2] Studies across countries have consistently identified that SUDs constitute a significant proportion of referrals to psychiatry. The visit to the general physician can be used as an opportunity to educate the patient regarding his/her psychoactive substance and offer treatment for SUD either in the same setting or through referral to another department within the hospital. Finally, various strategies have been tested to work in general hospital setting for management of SUDs. All of these forms a part of CL services for treatment of addictive disorders. This chapter reviews the different aspects of CL services in addiction psychiatry.

Epidemiology of substance use disorders (SUDs) in general hospital settings

The prevalence of SUDs in general hospital settings would vary depending on the type of population they serve. In a cross-sectional survey from a tertiary-care hospital and a community hospital, it was found that 36% of hospitalized patients were current smokers, while 16% were at-risk alcohol users, and 9% were at-risk cannabis users.[3] The prevalence in accident and emergency

settings is even higher[4] with up to 29% of all attendees to accident and emergency departments having alcohol related problems. Also, half of all serious injuries presenting to the emergency settings are alcohol related. Studies also document the prevalence of alcohol dependence to be about 50% among those presenting to psychiatry emergency services. Prevalence of SUDs has also been studied in operation theatres. One such study from Tehran, Iran, found that in general hospital operating rooms, 28.7% men and 2.7% women among 1136 patients were current substance users.[5] Substances detected included opium (57.3%), cigarette smoking (30%), alcohol (25.6%) and water pipe smoking (14.8%).This bears particular relevance as it directly affects the use of medications for anesthesia, muscle relaxation and analgesia, and there may be an inadvertent neglect of withdrawal symptoms.

A 1997 study, by Alaja and co-workers from Finland examined salient features of SUD referrals.[6] They found that SUDs were diagnosed in 28% of 1222 psychiatric referrals in general hospital settings and were the primary cause of referral in 70% of these consultations. The maximum proportion of referrals with SUDs were from the emergency department (50%), followed by those admitted in medical specialties (35%), surgical specialties (28%) and neurology (14%). In all departments, the proportion of SUD consultations was higher among men than women. A subsequent publication by the same group of authors in l998,[6] examined prevalence of comorbidities in patients having a diagnosis of SUD among referrals to psychiatry in general hospital settings, and found comorbidity in 99% of the patients with a prevalence of "triple diagnoses" (comorbid SUD, physical illness and mental illness) at 63%. In physical comorbidities, poisoning was most common, followed by digestive system diseases in males and injuries in females. Mental illnesses were comorbid in 24% of subjects with SUDs. The most common psychiatric comorbidities were personality disorders (43%) and mood disorders (40%). The same pattern was observed in cases receiving triple diagnoses, with comorbid SUD, poisoning and personality disorders, and comorbid SUD, poisoning and mood disorder being the most common combinations.

Impact of substance use disorder on physical problems

SUDs affect the course and outcome of comorbid medical illnesses, especially those with a chronic course. It is estimated that persons with diabetes mellitus who drank heavy amount of alcohol (more than 24 grams of alcohol per day) had more than five-fold risk of acute coronary events, end-stage renal disease, diabetic neuropathy or retinopathy compared to those who consumed less than 12 grams of alcohol per day.[7] Similarly, alcohol consumption results in poor outcome in cancers. For example, studies have found that daily

drinking or heavy drinking increased overall mortality related to cancers.[8] Alcohol is also seen to modulate the immune response to cancer cells and can affect progression and survival rates. The effect of alcohol is not limited to non-infectious diseases, but extends to infectious diseases as well. A meta-analysis conducted to assess the risk of alcohol consumption on tuberculosis showed that alcohol consumption caused 2.35 deaths (95% CI: 2.05-4.79) per 100,000 people from tuberculosis in 2014.[9] Alcohol consumption was associated with an increased risk of tuberculosis and was a major contributor to the tuberculosis burden of disease.

Concomitant use of alcohol is also seen to affect adherence to medications. In a meta-analysis of association of alcohol consumption with adherence to antiretroviral therapy, alcohol users were 55% less likely to adhere to HIV medication regimens than abstainers or persons who drank relatively less.[10] In another meta-analysis, it was seen that only 60% of alcohol using patients with chronic diseases took all their prescribed doses.[11] Alcohol's potential of negative effects on medication adherence may significantly compromise chronic disease management and outcomes. Similarly, continued substance use leads to poorer adherence to antiretroviral therapy. Injection drug users (IDUs) who actively inject show significantly lower adherence rates to antiretroviral treatment in comparison to the requirement of greater than 90% adherence rates.[12] The adherence rate of antiretroviral treatment among active cocaine users is also reported to be much lower at 27% compared to 68% adherence rate among those who did not use cocaine.[13]

Managing medical/surgical problems in comorbid SUD is also challenging. For example, management of peri-operative pain is difficult in a person who is opioid dependent due to tolerance to opioids.[14] There is also fear of a person with past history of dependence becoming dependent on opioids that are provided for pain management. Some studies have shown opioid dependence to interfere with biochemical parameters, also adding to metabolic disturbances in diabetes mellitus.[15,16] Various drug-drug interactions may occur even with tobacco smoking, which may complicate management of medical/surgical conditions.[17]

Management of substance use disorders in medical settings

Untreated alcohol and other SUDs have poor outcome, higher utilization of emergency and acute care hospital services, and are more likely to be readmitted with untreated acute and chronic health conditions.[2] Hence, it is imperative that SUDs be managed effectively. However, certain issues must be borne in mind during management of SUDs in those with medical problems.

It is known that under-reporting of drug use and, less commonly, alcohol use is to be expected in hospital settings, particularly in emergency departments.[18] Hence, it is important to use toxicological screens or other screening tools. In alcohol use disorders, hepatic, respiratory and cardio-vascular illnesses are most prevalent.[19] Cardiac manifestations of angina or myocardial infarction in those without expected risk factors, might imply the use of cocaine.[20] Non-medical use of prescription stimulants, particularly among adolescents, resulting in adverse cardiovascular effects is also on the rise.[21] Arrhythmias in adolescents and young adults may also be a consequence of excessive intake of energy drinks containing caffeine.[5] In renal manifestations, drug use, particularly intravenous, in the background of acute kidney injury, must prompt the physician to consider differentials of heroin associated nephropathy, HIV associated nephropathy or cocaine induced renal infarcts and atherosclerosis.[22] A common presentation to emergency departments is altered sensorium. If history or physical examination findings are suggestive of a history of drug use, the differentials may be alcohol poisoning, delirium tremens, Wernicke-Korsakoff's syndrome, hepatic encephalopathy, cannabis intoxication, opioid overdose, stimulant or inhalant intoxication.[23] Unresponsive states must prompt screening for illicit opioids and common prescription opioids associated with overdose such as oxycodone, hydrocodone and methadone.[24] Particularly, when altered sensorium is seen in a previously healthy, young individual, the possibility of having used club/rave drugs must be considered. Ecstasy use is associated with loss of consciousness, panic reactions and deep coma when mixed with gamma-hydroxybutyrate or opiates.[25] Elevated heart rate and blood pressure or agitation suggests use of stimulants, whereas decreased activity, respiratory depression and bradycardia might signal opiate or sedative-hypnotic use.[26] Another presentation is fever of unknown origin, in which the physician must be alert to usual etiologies in drug-using individuals such as HIV, endocarditis, cellulitis and sexually transmitted diseases.[27]

Identifying SUDs in the general hospital setting is necessary to accurately treat the medical illness, to make use of a "teachable moment" to address drug use and to decrease health-care costs.[28] Instruments that are most useful for this purpose would need to be able to detect use irrespective of history provided, and be brief and suitable for administration by professionals not trained for treatment of SUDs. Research on relevant properties of instruments that can be used in general wards for identifying current drug use is inadequate, but a few have been found to be comparatively sensitive and specific for use in general medical setting.[28] For alcohol use disorders, the Alcohol Use Disorders Identification Test (AUDIT) has good sensitivity but low specificity when identifying alcohol dependence in acute hospital settings.[29]

The CAGE questionnaire is very easy to use and has good case / non-case identification of alcohol abuse/dependence but not for harmful use. However, these tools have limitations that result in fewer cases being identified when they are used, compared to the use of urine or blood screening. In a study that administered urine and blood screening to admissions to both psychiatric and medical wards found the prevalence of legal drugs to be 47% and 42%, respectively and the prevalence of illegal drugs to be 36% and 13%, respectively.[30]

Recognizing the importance and the benefits of addressing SUDs in the hospital setting leads us to the question of how best to implement this. Service models have studied delivering such services through various means. One such model, Project ASSERT, utilized peer educators with prior experience of community outreach work to screen, administer a brief intervention and refer for further treatment in an emergency department setting.[31] Those who adhered to the scheduled follow up visits showed good acceptability of the service and significant reduction in the severity of drug problems. Some hospitals have nursing professionals specialized in addiction to help maintain the continuity of services between in-patient and community treatment. These nurses can deliver a range of services, either independently or as part of a consult team, such as screening, wound-care and prescribing.[32] Addiction counsellors and social workers play important roles in helping to transition from hospital-based care to on-going community-based care.[33] At the other end of the continuum stands intervention provided to in-patients by a multi-disciplinary specialist addiction consult team. One such study examined the effect on 30-day post-discharge outcomes of patients receiving routine care for SUDs versus intervention by an addiction consult team.[34] Screening for SUDs by a primary nurse of all admitted patients with the AUDIT-C and a single question asking about number of times an illicit substance was used in the year prior to admission was done. There was a significantly greater decrease in the Addiction Severity Index score for those receiving intervention from the addiction consult team. Addiction consult services can vary in the type of specialists that are involved.[35] Those staffed by psychiatrists alone may lack full integration into the medical management plan. The programs with internists or addiction medicine specialists only may lack the capacity to address the range of psychiatric and psychosocial issues that may be present. Another approach is a triage-by-patient type, that is patient being matched with the specialist who can address the acute problem. The combined approach provides some involvement of both specialties without matching to patient's specific needs. The curb side consultation approach offers access to both specialists as needed within the CL service. Thus, introduction of CL addition psychiatry can be of great use.

Management of SUDs in comorbid medical disorders

There are specific management strategies to be used for treating withdrawal symptoms. Alcohol withdrawal symptoms should preferably be managed with benzodiazepines with a longer half-life, so that some protection is offered if the patient leaves prematurely.[36] Also, if intravenous glucose solution is administered, it is critical to supplement with thiamine before administration. Supplementation with folate, magnesium and phosphate may also be required due to poor nutritional status. Another important and frequently mis-managed scenario is when alcohol dependent patients are admitted to ICUs. All patients must be screened, and longer half-life benzodiazepines be used to decrease the precipitation of withdrawal in medically critical patients.

Considering the fact that the majority of people who misuse prescription opioids obtain them from friends and relatives, it is of utmost importance to carefully assess and be vigilant for aberrant drug-related behaviors when prescribing opioids. Pain due to any cause will be exacerbated during opioid withdrawal. Patients on opioid maintenance treatment require additional opioid or non-opioid pain-relievers to manage acute pain. Methadone has several drug interactions and can prolong QT interval. Buprenorphine, being a partial agonist, may interfere with post-operative analgesia.

As opioids are increasingly being used in the management of chronic pain conditions, both cancer-related and non-cancer pain, concerns arise about the dosing of these drugs, the frequency and routes of administration, identification of aberrant drug-related behaviors and the overlap between physiological dependence and addiction.[37] Some important aspects of prescribing opioids for pain include development of physiological tolerance and dependence, addiction and opioid-induced hyperalgesia.[38] An issue in the use of short-acting opioids for pain is end-of-dose failure, when pain recurs or worsens towards the end of the dosing interval.[39] Thus the treating physician needs to be conversant with differentiating between physiological tolerance and addiction in a person on chronic opioid treatment. Some clinical features that can be identified are preoccupation with drug-taking, using despite harm, loss of control and craving. [40] Some authors have given criteria to help diagnose addiction in the setting of prescribed opioids.[39] The Center for Diseases Control, United States, has published a systematic review in 2016, with the latest evidence and recommendations regarding prescribing opioids for chronic pain.[41] Another complex issue is the treatment of chronic pain in persons maintained on agonist maintenance therapy. [42] These patients are more likely to use illicit drugs or alcohol for pain control.

Arguments have also been made regarding the ethics of allocating

resources such as organs for transplantation to patients whose illness is the result of an addiction. A common example is liver transplants for patients with alcoholic liver disease, where arguments on both scientific and moral grounds have been made. The concept of being proved a "reformed alcoholic" before being considered worthy and considering alcoholism a "self-inflicted illness" even today demonstrates the ambiguity of the medical profession towards the disease-model of addiction. [43] Another dilemma is when the person who is being treated for chronic pain is known to suffer from a SUD.[44] Specific concerns may be iatrogenic addiction to opioids, relapse to SUD and worsening of health and functioning status. This is an area that is being currently studied and the conclusion that can be drawn at this point is that patients with a history of addiction must not be ruled out for adequate pain relief with opioids but that this information must help clinicians better anticipate problems in management.

Studies have also assessed outcome of treatment of SUDs in medical settings. An extensive evaluation was undertaken of drug and alcohol CL services in New South Wales.[45] It was found that implementation of the services resulted in lesser number of unwanted incidents, cost-savings due to reduced stay and re-admissions, increased identification of drug and alcohol problems and decreased complications due to untreated withdrawal. Another study that evaluated the impact of alcohol and other drug CL services in Australia found that CL services reduced emergency department stay length and led to better adherence to medications.[46]

Addiction consultation liaison services in India

There is a paucity of literature from India regarding the various aspects of the practice of addiction CL services such as measures of the availability of services in different hospital settings, implementation techniques and measures of outcome when implemented. However, some studies have assessed these parameters with regard to psychiatry referrals as a whole. Diagnoses of SUDs were made in 8.7% of 160 referrals to a CL psychiatry team over two months at a tertiary teaching hospital in north India.[47] The study examined the demographic characteristics of the referred population and found that the majority were between the age of 31 to 45 years, married, educated and residing in Hindu nuclear families in urban areas. It was also seen that SUDs were significantly more common in males. A retrospective chart review of patients presenting to the emergency department of a tertiary hospital in Sikkim from 2000 to 2005 found that current substance use was found in 1.16% of psychiatry consults.[48] Alcohol use and opioid use was present in 77.8% and 14.8% cases respectively. Dextro-propoxyphene and pentazocine were the opioid

drugs most commonly reported. Interestingly, alcohol withdrawal was the most common cause (57.4%) for presenting to the emergency.

Another study that retrospectively examined the medical records of out-patients at a psychiatry department of a tertiary level hospital in Delhi found that 50.8% used substances including tobacco in the previous month.[49] Substance use was six to eight times more prevalent in men than in women, and tobacco followed by alcohol and cannabis were the most common substances used. In a study that included psychiatry referrals from both in- patient and out-patient departments to psychiatry at a tertiary hospital in South India over the span of two years, it was seen that SUDs were the reason for referral six times more often in in-patients compared to out-patients, indicating the need to screen carefully for SUDs at admission.[50]

The existing data shows that there is a high prevalence of SUDs in patients with medical illnesses visiting hospital and emergency settings in India as well. The onus of managing patients for SUDs then falls on the staff working in the hospitals. Unfortunately, management of SUDs is not taught well in undergraduate medical curriculum, and hence most doctors are not well-versed in treatment of even uncomplicated cases of SUDs. Psychiatrists are often the specialists called to provide treatment in such settings. Unfortunately, the number of psychiatrists is far too less, and many hospitals may not have a psychiatrist employed in the hospital. The addiction treatment facilities set up by the Government are generally placed away from hospital; and many facilities are also run by Non-Governmental Organisations. These facilities cannot be used for providing treatment and care for patients with SUDs admitted in hospitals. All of this makes providing optimal treatment of SUDs in medical settings very challenging in India. As mentioned for services in other parts of the world, various barriers may exist in providing effective care for SUDs in a CL setting ranging from organizational ones to aspects of routine clinical practice in each specialty. The organizational barrier may be the lack of a clear system for referral or the lack of or insufficient manpower in nursing and social service capacities. Other barriers may include not having a routine screening procedure in place for all treatment seekers, relying only on clinical diagnosis of those presenting with disorders at the severe end of the spectrum, delaying interventions for treatment of withdrawal and other acute presentations causing treatment drop-outs.[51]

Conclusion

SUDs form a substantial proportion of referrals to psychiatry consultation-liaison services. There is unequivocal evidence that SUDs in patients admitted for medical problems have adverse outcomes of their medical problems,

including adherence to the medicines prescribed for their medical illnesses. The practice of addiction treatment services in people with medical illnesses is complicated by altered drug metabolism, confounding presentations and ethical issues. Hence, psychiatrists who undertake to provide such services must be well-versed with these problems that may arise when providing consultation-liaison services. The practice of addiction psychiatry must anticipate the presence of barriers at every level, least of all being the attitude of colleagues in other medical and surgical specialties. A lack of research on these topics in India indicates that this area is unduly neglected, despite being of public health relevance. In this background, there is a need to develop CL addiction psychiatry in general hospital settings.

References

1. Degenhardt L, Whiteford HA, Ferrari AJ, Baxter AJ, Charlson FJ, Hall WD, et al. Global burden of disease attributable to illicit drug use and dependence: findings from the Global Burden of Disease Study 2010. Lancet 2013;382(9904):1564-1574.

2. Murphy MK, Chabon B, Delgado A, Newville H, Nicolson SE. Development of a substance abuse consultation and referral service in an academic medical center: challenges, achievements and dissemination. J Clin Psychol Med Settings 2009;16:77- 86.

3. Katz A, Goldberg D, Smith J, Trick WE. Tobacco, alcohol, and drug use among hospital patients: concurrent use and willingness to change. J Hosp Med 2008; 3(5):369-75.4.

4. Malone D, Friedman T. Drunken patients in the general hospital: their care and management. Postgrad Med J 2005; 81(953):161-6.

5. Alavi SS, Mehrdad R, Makarem J. Prevalence of substance abuse/alcohol consumption and their predictors among patients admitted in operating rooms of a general educational hospital, Tehran, Iran. ASIAN J Pharm Res Health CARE 2016;8:63-71.

6. Alaja R, Seppa K, Sillanaukee P, Tienari P, Huyse FJ, Herzog T, et al. Psychiatric referrals associated with substance use disorders: prevalence and gender differences. European Consultation-Liaison Workgroup. Alcohol Clin Exp Res 1997; 21:620- 6.

7. Munukutla S, Pan G, Deshpande M, Thandavarayan RA, Krishnamurthy P, Palaniyandi SS. Alcohol toxicity in diabetes and its complications: A double trouble? Alcohol Clin Exp Res 2016;40:686-97.

8. Zhang F, Zhu Z, Meadows GG, Zhang H. Chronic alcohol consumption inhibits melanoma growth but decreases the survival of mice immunized with tumor cell lysate and boosted with a-galactosylceramide. Int Immunopharmacol 2015; 28:359- 68.

9. Imtiaz S, Shield KD, Roerecke M, Samokhvalov AV, L6nnroth K, Rehm J. Alcohol consumption as a risk factor for tuberculosis: meta-analyses and burden of disease. Eur Respir J 2017;50:1700216.

10. Hendershot CS, Stoner SA, Pantalone DW, Simoni JM. Alcohol use and antiretroviral adherence: Review and meta-analysis. J Acquir Immune Defic Syndr 1999, 2009; 52:180.

11. DiMatteo MR. Variations in patients' adherence to medical recommendations: a quantitative review of 50 years of research. Med Care 2004; 42:200- 9.

12. Feelemyer J, Jarlais DD, Arasteh K, Uuskula A. Adherence to antiretroviral medications among persons who inject drugs in transitional, low and middle income countries: An international systematic review. AIDS Behav 2015; 19:575-83.

13. Arnsten JH, Demas PA, Grant RW, Gourevitch MN, Farzadegan H, Howard AA, et al. Impact of active drug use on antiretroviral therapy adherence and viral suppression in HIV-infected drug users. J Gen Intern Med 2002; 17:377- 81.

14. Coluzzi F, Bifulco F, Cuomo A, Dauri M, Leonardi C, Melotti RM, et al. The challenge of perioperative pain management in opioid-tolerant patients. Ther Clin Risk Manag 2017;13:1163-73.

15. Karam GA, Reisi M, Kaseb AA, Khaksari M, Mohammadi A, Mahmoodi M. Effects of opium addiction on some serum factors in addicts with non-insulin-dependent diabetes mellitus. Addict Biol 2004; 9:53-8.

16. Kouros D, Tahereh H, Mohammadreza A, Minoo MZ. Opium and heroin alter biochemical parameters of human's serum. Am J Drug Alcohol Abuse 2010; 36:135- 9.

17. Zevin S, Benowitz NL. Drug interactions with tobacco smoking. An update. Clin Pharmacokinet 1999; 36:425- 38.

18. Rockett IRH, Putnam SL, Jia H, Smith GS. Declared and undeclared substance use among emergency department patients: a population-based study Addiction 2006;101:706-12.

19. Rivas I, Sanvisens A, Bolao F, Fuster D, Tor J, Pujol R, et al. Impact of medical comorbidity and risk of death in 680 patients with alcohol use disorders. Alcohol Clin Exp Res 2013; 37 Suppl l:E221-227.

20. Lange RA, Hillis LD. Cardiovascular complications of cocaine use. N Engl J Med 2001; 345:351- 8.

21. Chen LX Crum RM, Strain EC, Caleb Alexander G, Kaufmann C, Mojtabai R. Prescriptions, nonmedical use, and emergency department visits involving prescription stimulants. J Clin Psychiatry 2016; 77:e297- 304.

22. Crowe AV, Howse M, Bell GM, Henry JA. Substance abuse and the kidney. QJM Int J Med 2000; 93:147- 52.

23. Basu D, Basu A, GhoshA. Assessment of clinical co-morbidities. Indian J Psychiatry 2018; 60:457.

24. Cai R, Crane E, Poneleit K, Paulozzi L. Emergency department visits involving nonmedical use of selected prescription drugs in the United States, 2004- 2008. J Pain Palliat Care Pharmacother 2010;24:293-7.

25. Liechti ME, Kunz I, Kupferschmidt H. Acute medical problems due to Ecstasy use. Case-series of emergency department visits. Swiss Med Wkly 2005; 135:652- 7.

26. Ricaurte GA, McCann UD. Recognition and management of complications of new recreational drug use. Lancet 2005; 365:2137-45.

27. Draper JC, McCance-Katz EF. Medical illness and comorbidities in drug users: implications for addiction pharmacotherapy treatment. Subst Use Misuse 2005; 40:1899- 921.

28. Mdege ND, Lang J. Screening instruments for detecting illicit drug use/ abuse that could be useful in general hospital wards: A systematic review. Addict Behav 2011; 36:1111- 9.

29. Hearne R, Connolly A, Sheehan J. Alcohol abuse: Prevalence and detection in a general hospital. J R Soc Med 2002; 95:84-7.

30. Mordal J, Bramness JG, Holm B, M0rland J. Drugs of abuse among acute psychiatric and medical admissions: laboratory based identification of prevalence and drug influence. Gen Hosp Psychiatry 2008; 30:55- 60.

31. Bernstein E, Bernstein J, Levenson S. Project ASSERT: an ED-based intervention to increase access to primary care, preventive services, and the substance abuse treatment system. Ann Emerg Med 1997;30:181-9.

32. Royal College of Nursing, Association of Nurses in Substance Abuse, National Substance Misuse Non-Medical Prescribing Forum, Public Health

England. The Role of Nurses in Alcohol and Drug Treatment Services 32, 2017.

33. Galvani S. Alcohol and other drug use: The roles and capabilities of social workers. Manchester Metropolitan University 2015.

34. Wakeman SE, Metlay JP, Chang X Herman GE, Rigotti NA. Inpatient addiction consultation for hospitalized patients increases post-discharge abstinence and reduces addiction severity. J Gen Intern Med 2017;32:909-16.

35. Marcovitz D, Nisavic M, Bearnot B. Staffing an addiction consult service: Psychiatrists, internists, or both? Gen Hosp Psychiatry 2019;57:41-3.

36. Levenson JL. The American Psychiatric Association Publishing Textbook of Psychosomatic Medicine and Consultation-Liaison Psychiatry, Third Edition. American Psychiatric Pub 2018.

37. Miotto K, Compton P, Ling W, Conolly M. Diagnosing addictive disease in chronic pain patients. Psychosomatics 1996;37:223-35.

38. Højsted J, Sjogren P. Addiction to opioids in chronic pain patients: A literature review. Eur J Pain 2007; 11:490 - 518.

39. Portenoy RK. Chronic opioid therapy in non-malignant pain. J Pain Symptom Manage 1990;5:S46-62.

40. Portenoy RK. Appropriate use of opioids for persistent non-cancer pain. Lancet 2004;364:739-40.

41. Dowell D, Haegerich TM, Chou R. CDC Guideline for prescribing opioids for chronic pain- United States, 2016. JAMA2016; 315:1624-45.

42. Rosenblum A, Joseph H, Fong C, Kipnis S, Cleland C, Portenoy RK. Prevalence and characteristics of chronic pain among chemically dependent patients in methadone maintenance and residential treatment facilities. JAMA 2003; 289:2370-8.

43. Mellinger JL, Volk ML. Transplantation for Alcohol-related Liver Disease: Is It Fair? Alcohol Alcohol 2018; 53(2):173-7.

44. Geppert CMA. To Help and not to harm: Ethical issues in the treatment of chronic pain in patients with substance use disorders. Pain Depress 2006; 25:151- 71.

45. Walker B. The hospital drug and alcohol consultation liaison model of care 42, Sydney: NSW Ministry of Health 2015.

46. Reeve R, Arora S, Butler K, Viney R, Burns L, Goodall S, et al. Evaluating the impact of hospital based drug and alcohol consultation liaison services. J SubstAbuse Treat 2016; 68:36-45.

47. Goyal SG, Sagar R, Sharan P. Sociodemographic profile and psychiatric diagnosis of patients referred to consultation-liaison psychiatric services of general hospital psychiatric unit at a Tertiary Care Center. J Ment Health Human Behav 2017;22:45-49.

48. Bhalla A, Dutta S, Chakrabarti A. A profile of substance abusers using the emergency services in a tertiary care hospital in Sikkim. Indian J Psychiatry 2006; 48:243.

49. Gupta A, Gauba D, Bhatia T, Deshpande SN. A study of tobacco and substance abuse among mentally ill outpatients in a tertiary care general hospital. J Ment Health Human Behav 2016;21:117-121.

50. Keertish N, Sathyanarayana MT, Kumar BGH, Singh N, Udagave K. Pattern of psychiatric referrals in a tertiary care teaching hospital in southern India. J Clin Diagn Res 2013; 7:1689- 91.

51. Beresford TP. Alcoholism consultation and general hospital psychiatry. Gen Hosp Psychiatry 1979;1:293- 300.

Chapter14

Use of Psychotropics in the Medically Ill

Koushik Sinha Deb, Udit Kumar Panda
Department of Psychiatry & National Drug Dependence Treatment Centre
All India Institute of Medical Sciences, New Delhi 110029

Abstract

Pharmacotherapeutics by nature is trans-systemic, and therefore a proper understanding of drug-drug and drug-disease interactions forms the basis of good clinical practice across all fields of medicine. Judicious use of psychotropic medications in medically ill patients can significantly improve outcome of both the psychiatric disorder as well as the underlying medical condition. However, careful considerations need to be made regarding the underlying medical illnesses and drug interactions, and the potential of increased adverse drug reactions due to impaired hepatic, renal, cardiac and gastrointestinal functions. The benefits of using psychot ropic s in the medically ill need to be assessed against the risks and actual need for behavioural control. This chapter focuses on the principles and practice of psychopharmacology in medically ill patients and provides an understanding regarding the use of such medications in specific medical conditions and in specific clinical populations.

Introduction

Psychotropic medications are as stigmatized as the psychiatric illnesses. They are erroneously perceived as habit forming drugs, associated with sedation and other troublesome side effects. Judicious use of psychotropic medications in medically ill patients upon careful evaluation of the underlying medical illnesses, interaction of psychotropics with other medications being used to treat medical illness, potential for increased adverse drug reactions because of impaired hepatic, renal, cardiac and gastrointestinal functions besides patient specific factors. Therefore, careful consideration ofrisks and benefits of using psychotropics is essential for providing relief from behavioural symptoms in medically ill patients. This chapter focuses on basic principles of psychopharmacology in medically ill population, brief elaboration of pharmacokinetics and pharmacodynamics of psychotropics and understanding the use of such

medications in various medical conditions and specific clinical populations. Appendix -1 provided at the end of the chapter is intended to be quick reference for clinicians in liaison settings.

Basic Principles of Use of Psychotropics in Medical Illness

Detailed assessment of patient's primary and associated medical problems along with physical, laboratory and imaging findings forms the basis of all pharmacotherapy. Diagnostic clarity and identification of target symptoms are essential for all illnesses including those seen in C-L settings.[1] Additional points of importance for prescribing medications in liaison setting are discussed below.

1. **Review all medications** the patient is receiving including psychotropics, non-psychotropics, over-the-counter medications, herbal/traditional supplements, alcohol, nicotine and other illicit drug use with special focus on drug-drug interactions.
2. Select a drug with least side effect profile, taking into account drug absorption, bioavailability, protein binding, metabolism, and gastrointestinal (GI), renal and hepatic clearance. Whenever possible, a **drug with short half-life and no active metabolite** is chosen.
3. **Factors specific to each patient** like age, gender, intended use, expected side effects, known medical co-morbidities, patient preference, dosing schedule, routes of administration, past response to psychotropics, etc. should be considered and discussed with the primary treating team prior to selecting psychotropics.
4. **Polypharmacy should be avoided** as much as possible and prescribed drug regimen should be made as simple as possible.
5. Psychotropic medications should generally be **started at a lower dose** and dose should be built up gradually. Minimum dose of medication necessary to obtain the desired clinical response should be used.
6. Adding or discontinuing drugs or change in dosage should be done **one drug at a time** as simultaneous alteration of drugs/dosing makes it difficult to determine efficacy and monitor adverse drug effects.
7. Efficacy and **adverse effects should be monitored** during dose titration. Specific investigations like white blood counts, liver function tests, renal function tests, serum electrolytes, ECG, drug serum levels should be repeatedly measured to aid in identifying adverse effects at the earliest.
8. Primary treating physician and patient should be **made aware of effects**

of abrupt discontinuation of psychotropic medication and its effect on physical and mental health.

9. Factors affecting drug compliance during transition from an inpatient to outpatient setting should be noted down. Explaining target dose, medication schedules and clinical monitoring goes a long way to **ensure compliance** to psychotropic medications.

10. Clearly communicate the **expected onset of action** of the medication started. Psychotropics often have a delayed onset of action, which often extends to weeks. Non-communication of expected outcome often results in drug discontinuation, rapid dose titration or clinical miscommunication.

Pharmacokinetics and Pharmacodynamics of Psychotropics

Pharmacokinetics refers to "the body's effect on the drug", which includes absorption, metabolism, distribution, elimination, and protein binding. Medical illness sequelae may result in end-organ damage and disrupt pharmacokinetic processes. Pharmacodynamics refers to "the effect of the drug on the body" and the activity of the drug at receptor sites.[2]

Absorption of drugs: Most psychotropic drugs are absorbed in small bowel. Food can slow absorption rate, but the extent of absorption is unaffected. Surface area of absorption, intraluminal pH, chelating agents like antacids, GI blood flow and chemical properties of drugs affect absorption. Malabsorption syndromes, GI surgeries (gastric bypass, removal of small intestine) and conditions affecting GI blood flow can delay or impair drug absorption. Drugs administered by intramuscular route will have impaired absorption when there is decreased muscle mass or tissue perfusion, as in cachexia.

Distribution of drugs: A host of factors like volume of distribution, protein binding, serum pH, degree of ionization, lipid solubility, etc. influence distribution of drugs. Most psychotropics are lipophilic and stored in fat (notable exception-lithium). With long term use, there is accumulation of drugs in the fat tissue causing prolonged effects of drugs. Volume of distribution is dependent on total body mass and total body water. Both are decreased commonly in the elderly population and cachectic patients.

With the exception of lithium, pregabalin, gabapentin and topiramate, psychotropics are highly protein bound drugs. Plasma proteins are decreased with age, malnourishment, frailty, and in a number of hepatic and renal ailments. This causes increased free fraction of the drugs in the blood stream causing increased adverse effects. It must be noted that serum total drug concentration,

which is a measure of both free and protein bound fractions is not a true reflection of free drug fraction which causes both therapeutic and adverse effects. In clinical conditions, where serum protein is decreased, measuring total drug concentration may not accurately guide optimization of drug dosage.

Drug metabolism: Drug metabolism in liver is divided in to 2 steps:

Phase I reactions involve steps like oxidation, reduction and hydrolysis that makes the resulting metabolite water soluble and use major enzymes like cytochrome 450 in the process. Two of the most commonly used cytochrome enzymes in psychotropic metabolism are CYP3A4 and CYP2D6. Various drugs are known to induce or inhibit these enzymes leading to alteration in drug metabolism (Table 1).

Table 1: Psychotropics and their effect on the P450 enzyme

Common P450 enzyme inducers	Common P450 enzyme inhibitors
Rifampicin	Fluoxetine (2 D6, 2C9)
Carbamazepine (IA2, 2C9, 2Cl9)	Paroxetine (2D6, 2B6)
Phenobarbital (IA2, 2C9, 2Cl9)	Fluvoxamine (IA2, 2Cl9)
Phenytoin	Sertraline (2D6, UGT IA4)
Chronic Smoking	Nefazodone (3A4)
	Bupropion (2D6)
	Duloxetine (2D6)
	Haloperidol (2D6)
	Valproic Acid (2C9)
	Diphenhydramine (2D6)

Phase II reactions involve conjugation processes like glucuronidation, acetylation and sulfation which make phase I products chemically inert and suitable for elimination. Phase II process uses major enzymes like uridine glucuronosyl transferases which are increased in men, overweight patients and smokers, and decreased in women, alcohol users, underweight and malnourished patients. Drugs like lorazepam, oxazepam, haloperidol, olanzapine, lamotrigine, etc. undergo glucuronidation which is primarily unaffected until complete liver failure, making them drugs of choice in such cases.

Drug excretion: Kidneys are the organs for water soluble drug excretion. Glucuronidation facilitates biliary excretion, whereas other metabolic processes in liver increase water solubility. The ratio of renal to GI excretion varies from drug to drug which is an essential guide in dosing of psychotropics in renal impairment.

Pharmacodynamics of drugs: Pharmacodynamics refers to action of drugs at a target mediating its therapeutic and adverse effects. Medically ill,

debilitated, and elderly patients are more susceptible to adverse effects of drugs. Pharmacodynamic drug-drug interaction can involve both psychotropic and non-psychotropic drugs targeting same sites. Anticholinergic toxicity, serotonin syndrome and QTc prolongation are relevant examples.

Routes of psychotropic administration: Psychotropics are mostly given by oral route. Agitation, oropharyngeal pathologies, nil orally restrictions, nausea and vomiting, risk of aspiration, surgeries and debilitated patients pose difficulty in administering psychotropics by oral route. Similarly, for patients with muscle wasting and poor tissue perfusion, intramuscular (IM) injections are avoided. Antipsychotics like haloperidol, olanzapine, aripiprazole and benzodiazepines like lorazepam are available for administration in IM route. Haloperidol is also used in intravenous (IV) route with higher bioavailability and decreased risk of extrapyramidal symptoms but with increased risk of QTc prolongation. Lorazepam and diazepam can be given IV, but they are associated with risk of increased sedation and respiratory depression. Valproate is the only mood stabilizer available in parenteral formulation. Haloperidol, asenapine, olanzapine, diazepam, clonazepam, mirtazapine, clomipramine, trihexyphenidyl and promethazine are available in sublingual forms for administration in some countries. Selegiline is available as a transdermal patch as an antidepressant. Although no suppository forms are available for psychotropics, the tablet formulation can be crushed and used in rectal route when appropriate. It should be remembered that controlled, delayed and extended release formulations should not be crushed.

Psychopharmacology of Organs System Disordered

Although discussion on each organ system disorder in relation to psychotropics is beyond the scope of this chapter, a clinical summary of the most commonly encountered issues is provided below.

Gastro-intestinal disorders

SSRIs, the most commonly used antidepressants, have significant GI side effects, mostly during initiation of treatment. They are undesirable in patients with chronic diarrhoea, nausea or increased GI motility. SSRIs also impair platelet aggregation by reducing activity of serotonin transporter in platelets, which may result in abnormal bleeding. Simultaneous use of NSAIDs compound the risk of GI bleeding, risk being more in elderly patients. The risk can be minimized by use of a proton pump inhibitor.[3] Antidepressants when used to treat comorbid mood disorders in inflammatory bowel diseases have been shown to reduce relapse rate, use of steroids and endoscopies. Tricyclic antidepressants (TCAs) have been found to provide some relief in

symptoms of irritable bowel symptoms.

Psychotropics with anticholinergic properties should be avoided in gastroparesis and constipation. Among antipsychotics, clozapine is known to frequently cause intestinal hypomotility and constipation. Valproic acid and some antipsychotic drugs (clozapine, olanzapine, risperidone, haloperidol) have been rarely associated with pancreatitis. Long term monitoring is warranted, but routine pancreatic enzyme testing is not recommended.

Gastric bypass and intestinal surgeries impair drug absorption. Drugs with extensive first pass metabolism can have increased concentration and lead to greater systemic effects. Controlled, delayed and extended release formulations depend upon extended intestinal exposure and thus should be avoided in such cases and immediate release formulations should be used.

Hepato-biliary disorders

Liver diseases are a common co-morbidity in mental and substance use disorders. Abnormal liver function can cause psychiatric symptoms along with physical symptoms like fatigue, personality changes, psychomotor dysfunction, impaired attention and arousal, and other changes in other higher mental functions. Liver diseases can affect psychotropic drug pharmacokinetics from absorption till elimination. This in turn reflects in drug levels, duration of action and drug related adverse effects. Hypoproteinemia, which is usually associated with liver diseases can cause decreased plasma protein binding of psychotropics, leading to an increased free drug in blood stream causing enhanced adverse effects. Reduced synthesis of liver enzymes and impaired blood flow to liver causes decreased metabolism and elimination of drugs. Most psychotropics are lipid soluble and undergo an extensive phase I metabolism. In cirrhosis, phase I enzymes like cytochrome P450 are reduced, while phase II metabolism enzymes like uridine 5'-diphosphoglucuronil-transferase activity are generally preserved. Drugs that are mainly metabolised by phase II pathways are useful in patients with cirrhosis (loazepam, oxazepam, olanzapine). Sedatives should be used with caution in liver failure because they can precipitate hepatic encephalopathy. Similarly, TCAs and low potency antipsychotics with anticholinergic action may exacerbate hepatic encephalopathy in end stage liver disease due to intestinal stasis and promotion of delirium. Haloperidol in low doses can be used for management of agitation in hepatic encephalopathy and has good safety profile for long term use. In end stage liver diseases, behavioural symptoms emerge not only from underlying organ dysfunction but also from stress of dealing with terminal illness.

Some anticonvulsants, antidepressants and antipsychotic drugs are

associated with hepatotoxicity although the incidence is low. Valproic acid, carbamazepine, duloxetine and nefazodone are more commonly implicated in induction of hepatic damage. Monitoring of liver enzymes aspartate aminotransferase (AST or SGOT) and alanine aminotransferase (ALT or SGPT) should be done while starting these medications and elevation of AST or ALT levels 2-3 times the baseline should be considered significant. Clinical monitoring for signs and symptoms of liver damage is also necessary as laboratory testing alone is not reliable. Valproic acid can also cause hyperammonemia by blocking conversion of ammonia to urea which can lead to encephalopathy. Serum ammonia measurement should be done if confusion develops during valproate administration. Venlafaxine, trazodone, thioridazine and chlorpromazine are known to cause cholestasis.

Lithium, although renally excreted, should also be used with caution in end stage renal disease with ascites because of fluctuating fluid balance. Basic principle for prescribing psychotropics metabolized by liver in hepatic disorders is to start with a lower dose of medication and titrate slowly for adequate therapeutic response. Drugs with wide therapeutic index are safer choices.[4]

Haematological disorders

SSRIs and SNRIs are known to cause bruising and prolonged bleeding time due to interference in platelet aggregation. Other drugs that interfere with platelet aggregation like NSAIDs, heparin, fish oil supplements, vitamin E, etc. can exacerbate bleeding tendencies when given with SSRIs/SNRIs. Valproic acid is also known to cause thrombocytopenia. As such valproic acid, SSRIs and SNRIs should be used with caution in early post stroke phase, post-surgery or for patients with liver disease and bleeding disorders.

Leukopenia/agranulocytosis is associated with antipsychotics (clozapine, quetiapine, risperidone, paliperidone, lurasidone), mood stabilizers (carbamazepine, oxcarbazepine) and antidepressants (mirtazapine, nefazodone). Further caution is advised when these drugs are used in immunocompromised populations and patients receiving immunosuppressant therapies. Routine blood counts are required in clozapine therapy, but not necessary with other psychotropic drugs.[5]

Renal/urological disorders

Most psychotropics are well tolerated and can safely be used in renal diseases. Reduced renal function is important for drugs that are largely excreted through kidney or have renally excreted active metabolite like lithium, gabapentin, pregabalin, topiramate, etc. The physician's desk reference recommends that patients with end stage renal disease (ESRD) should receive

two-thirds of the maximum dose of most psychotropic medications.

Renal failure is characterised by hypoalbuminemia, proteinuria, accumulation of protein binding inhibitors and an increased free fraction of drugs. In ESRD, absorption of medication is affected by gastric alkalization and changes in gastrin level. Patients with ascites and oedema have a higher volume of distribution and thus may require higher initial doses. Also, retention of urea competes for plasma protein binding for drugs like valproate, resulting in higher free drug plasma concentration. Active drug metabolites may get retained in renal failure causing adverse effects.

Among antidepressants, fluoxetine and sertraline are excreted unchanged in renal insufficiency, making them choicest for use for depressive symptoms. Venlafaxine, bupropion and mirtazapine have active metabolites and their clearance is reduced in renal diseases. Among antipsychotics, haloperidol is one of the safer choice, considering the fact that less than 1% of haloperidol is excreted in urine. Risperidone and its active metabolite 9-hydroxy risperidone show reduced clearance (by 60%) in renal failure and thus their dose should be reduced in moderate to severe renal failure. Amisulpiride is primarily metabolized by kidneys and 50 % dose reduction is recommended in mild to moderate renal failure. Antipsychotics with a high propensity to cause QTc prolongation are better avoided in renal diseases as it can be compounded by fluid and electrolyte imbalance causing fatal cardiac arrhythmias. Benzodiazepines are primarily metabolized by liver and thus are relatively safe in renal insufficiency. For creatinine clearance of less than 10 ml/min, dose of chlordiazepoxide should be reduced by 50 %. Half-life of lorazepam is prolonged in severe renal failure. Lithium is contraindicated to be used in acute renal failure. In chronic renal failure, however, lithium can be given as a post-dialysis dose as it is completely dialyzable.[6]

Drugs removed by dialysis include lithium, pregabalin, valproate, topiramate, gabapentin and levetiracetam.

Cardiovascular disorders

Depressive disorders are highly prevalent in cardiovascular illnesses and are also independent risk/prognostic factors in such illnesses. There is an established bidirectional causative relationship between depressive and coronary artery disorders. Sertraline and escitalopram are considered safe and effective in patients with recurrent depression occurring following myocardial infarction (MI) and reduce the incidence of severe cardiac events. TCAs are contraindicated after MI because of their cardiotoxic side effects including QTc prolongation, postural hypotension, anticholinergic effects and

conduction delays. TCAs and low potency antipsychotics cause postural hypotension by blocking alpha 1 receptors resulting in syncope and fall. Venlafaxine causes hypertension at a dose range higher than 200mg/day. Lithium intoxication can cause T wave changes, sino-arterial block, atrio-ventricular conduction disturbance and premature ventricular contractions. Lithium should be used in cases of congestive heart failure with caution due to salt restriction and use of diuretic medication.[7]

Both typical and atypical antipsychotics have a similar dose related risk of sudden cardiac death. Olanzapine and risperidone have the least reported cardiac complications compared to most antipsychotics. Tachycardia and myocarditis can develop acutely in the first 2 months of clozapine use and cardiomyopathy can occur with its use for more than 8 weeks. ST and T wave changes that mimic ischaemia can also occur with clozapine.[8] Anticholinergic medications are associated with tachycardia and less frequently of hypertension.

Psychotropics and QTc Interval: Psychotropics can cause a delay in cardiac repolarization resulting in a delay in rate corrected QT interval (QTc). In rare cases, it can lead to a serious life threatening polymorphic ventricular tachycardia called torsade de pointes. Risk factors include age >65 years, female sex (longer QTc interval than men and twice the risk for drug induced torsade de pointes), pre-existing cardiovascular diseases, congenital long QT syndrome, bradycardia and hypokalemia. Mean QTc length is 400ms with upper limit for normal defined as 460ms for women and 450ms for men. A QTc length >500ms is considered a major risk factor for torsade de pointes and warrants discontinuation of the psychotropic involved.

Among psychotropics, thioridazine, pimozide and ziprasidone have the highest risk for QTc prolongation. Intravenous haloperidol in higher doses also carries risk of QT prolongation. QTc prolongation is reported with newer antipsychotics, tricyclic and tetracyclic antidepressants, SSRIs, venlafaxine and lithium. Pathological QTc prolongation increases with increasing dose of most of these drugs; therefore, minimal and adequate dose, and slow titration are necessary when use of such drugs is unavoidable. Pre-treatment ECG and follow-up monitoring, slow dose escalation, monitoring serum potassium, magnesium and other electrolytes should be undertaken in susceptible cases.[9]

Respiratory disorders

Antidepressants (SSRIs and SNRIs) are indicated as first line treatment for treating depressive and anxiety symptoms in COPD. Benzodiazepines are known respiratory depressants and may precipitate respiratory failure in a

patient with low respiratory reserve. Bronchitis, restrictive lung diseases and sleep apnoea patients are most susceptible to adverse effects of benzodiazepines and the medication should be avoided in such population. 'Z' drugs like zolpidem, buspirone and non-benzodiazepine hypnotics are generally first line choice in anxiety disorders with comorbid respiratory illness.[10] Low dose antipsychotics or antidepressants with sedating properties are safer alternatives for acute anxiety in COPD. Non-pharmacological interventions can be explored for management of anxiety and depressives states in respiratory disorders.[11] Antipsychotics that cause laryngeal dystonic reactions, tardive dyskinesia and cholinergic rebound upon discontinuation should be used with caution. Among mood stabilizers, carbamazepine is associated with pulmonary eosinophilia, parenchymal lung diseases and respiratory failure. Valproate and lithium are usually first agents of choice in respiratory disorders.

Neurological disorders

Behavioural symptoms can arise in a variety of neurological disorders like dementia, stroke, traumatic brain injury, multiple sclerosis, Parkinson's disease, epilepsy etc. Psychotropic medication can also cause a variety of neurological symptoms like extrapyramidal side effects and cognitive disturbances. Basic principles of prescribing psychotropics in neurological disorders include a comprehensive neuropsychiatric evaluation, adapting a "start low go slow" approach, choosing a drug based on disease specific or symptom specific approach and a keen watch on neurological side effects of the psychotropics.

Delirium: Delirium is a common neuropsychiatric syndrome encountered in medical and surgical settings. It is characterised by disturbance in consciousness, disorientation, global cognitive dysfunction, thought and perceptual deficit and a fluctuating course. Various measures like removing restrains, controlling pain, providing environmental cues, sensory stimulation and aids, minimizing polypharmacy, etc. are employed for preventing and treating delirium. Antipsychotics in lower doses are classically employed to control agitation associated with hyperactive delirium. There is good evidence base for used of haloperidol in small doses (<3.5 mg/day) in decreasing intensity and duration of delirium. Atypical antipsychotics like olanzapine, risperidone and quetiapine can also be used in low doses, but their benefit over haloperidol is not well established. Low dose antipsychotics are also beneficial in addressing symptoms of hypoactive delirium. They should be used for shorter duration in elderly patients as they are known to precipitate cerebrovascular events and increase mortality. Benzodiazepines, opioids and anticholinergic medications are avoided as they can deteriorate delirious states. One exception is alcohol and

benzodiazepine withdrawal delirium where long acting benzodiazepines are the medication of choice. Newer drugs like dexmedetomidine, melatonin and memantine have been tried with doubtful benefit in delirium.

Epilepsy: All antidepressants and antipsychotics decrease seizure threshold, which is a dose dependent adverse effect. Risk factors for seizure include inherited predilection, prior history, extremes of age, brain injury and reduced drug clearance. Psychotropics with highest seizure risk include bupropion, clomipramine, maprotiline, clozapine and chlorpromazine. Among antipsychotics haloperidol, risperidone, pimozide and fluphenazine have the lowest seizure risk, while in antidepressants fluoxetine, sertraline, paroxetine, venlafaxine and trazodone carry a lower potential for precipitating seizures).[12]

Epilepsy itself is associated with depression, psychosis and anxiety states that should be treated appropriately.

Cerebrovascular Diseases: This group of patients show extra sensitivity to neurological side effects of psychotropics. Drugs causing postural hypotension (TCAs, low potency antipsychotics) should be avoided in patients with history of syncope. In post-stroke depression, SSRIs are the agents of choice. In addition to alleviating depression, SSRIs are known to cause improvement in cognitive symptoms which appear secondary to a cerebrovascular event. The risk of bleeding associated with use of SSRIs should be kept in mind, especially when there is a need for combined use with anticoagulants or NSAIDs.[13] All antipsychotics (typicals and atypicals) have increased risk of stroke associated with them when used in geriatric population and carry a black box warning.[14]

Dementia: For cognitive deficits of dementia, cholinesterase inhibitors like donepezil, rivastigmine, galantamine and NMDA antagonist memantine are commonly used. SSRIs are considered the first line agents for depression and anxiety in dementia because of their relative benign side effect profile. For psychosis and agitation associated with dementia, antipsychotics, cholinesterase inhibitors and antidepressants all have some role. Among antipsychotics, haloperidol has most comprehensive evidence for management of aggression, but not agitation. Aripiprazole, risperidone, olanzapine and quetiapine have shown benefit in controlling aggression while risperidone and aripiprazole have beneficial effects on psychotic symptoms. Considering higher propensity of side effects including serious cardiovascular events in the elderly population, it is of paramount irnportence that antipsychotic medication be started at lower doses and any increment in dosing be gradual. These should be used only when there are no other effective pharmacological alternatives available. Both cholinesterase inhibitors and SSRIs might be reasonable

medications for long term management of agitation and possibly psychotic symptoms and are perceived to be safer than antipsychotics. Drugs with anticholinergic effects and benzodiazepines should be avoided as they promote confusion and increase the risk of falls.[15]

Parkinson's disease: Parkinson's disease (PD) is associated with neuro-psychiatric symptoms of apathy, fatigability, depression, cognitive impair ment, and psychosis. Drugs used for treatment of PD can have psychiatric side effects including delusions, hallucinations, impulsive and catastrophic behaviour, mania, and agitation. Thus, behavioural problems in PD cause significant morbidity and care giver burden.

Antidepressants are generally well tolerated and effective in management of depressive and anxiety symptoms in PD. TCAs in theory should be more beneficial than SSRIs due to their anticholinergic effects. SSRIs have occasionally been reported to exacerbate motor symptoms and can potentially precipitate serotonin syndrome when given with MAO inhibitors like selegiline. Dopamine agonists and psychostimulants like modafinil have been tried to treat apathy and fatigue in PD with limited evidence base for efficacy.

For psychotic/affective symptoms, conventional antipsychotics are avoided as they can worsen motor symptoms of PD. Quetiapine is frequently used to treat psychosis in PD with its efficacy demonstrated in few open label clinical trials. Clozapine in lower doses is also effective in treating psychotic symptoms without aggravating motor symptoms of PD. Antipsychotic agents should be used only when decreasing dopaminergic agents used to treat PD to its minimum effective dose is unable to control psychotic symptoms.[16]

Metabolic and endocrine disorders

Hypothyroidism: Subclinical to moderate hypothyroidism is often associated with depressive symptoms. Severe hypothyroidism can give rise to psychosis (myxedema madness, delirium and catatonia). Thyroid hormone (T3) supplementation is an established strategy for augmenting antidepressant medications in case of inadequate response in depressive disorders. Rapid cycling and lithium refractoriness have been associated with clinical and subclinical hypothyroidism in patients with bipolar disorder, underscoring the need for thyroid monitoring and treatment. Lithium interferes with uptake of iodine in thyroid, iodination of tyrosine, changes structure of thyroglobulin and inhibits release of T4 hormone. Lithium induced hypothyroidism develops in 5% to 35 % of patients taking lithium. Various risk factors include female sex, predisposition to autoimmune hypothyroidism, family history, duration of treatment, weight gain more than 5 kgs, age older than 50 years, etc. If clinically

significant hypothyroidism occurs or subclinical hypothyroidism persists beyond 3 months after starting lithium, T3 supplementation or switching to a different mood stabilizer is recommended. Lithium can also cause hyperthyroidism and nephrogenic diabetes insipidus as other endocrine side effects.[17]

Diabetes mellitus: Atypical antipsychotics are known to cause weight gain, impair glucose tolerance, precipitate new onset T2DM, diabetic ketoacidosis and hyperlipidemia. Clozapine and olanzapine have the highest risk and should be avoided. Regular monitoring of parameters should be undertaken for those on atypical antipsychotics to check for development of metabolic syndrome.[18]

SNRIs (venlafaxine, duloxetine) provide benefit for both depression and diabetic neuropathic pain. TCAs are also beneficial, but it should be kept in mind that patients are more vulnerable to anticholinergic side effects, sexual dysfunction and postural hypotension.

Hyperprolactinemia: Hyperprolactinemia is a relatively common side effect of antipsychotics. It is generally defined as a serum prolactin of more than 20ng/ml and can attribute to menstrual irregularities, decreased libido, galactorrhoea, impotence, infertility, and other sexual dysfunctions. Antidepressants, opioids, antiemetics and antihypertensive agents are major contributing drugs for hyperprolactinemia. Generally, phenothiazines, butyrophenones, risperidone and amisulpride carry the greatest risk for development ofhyperprolactinemia and prolactinomas among antipsychotics. Atypical antipsychotics like olanzapine and quetiapine carry modest risk, while ziprasidone and aripiprazole carry low risk for elevating serum prolactin. Potency of D2 blockade, increased age and female sex carry more risk. Treatment strategies include decreasing dose of the offending medication, changing agents, adding a partial D2 agonist like aripiprazole or using a dopamine agonist bromocriptine.[19]

SPECIAL POPULATIONS

Pregnancy

Use of psychotropics in pregnancy raises few concerns both to the mother and the fetus. Risk to pregnancy includes preterm delivery, hypertension and preeclampsia, and spontaneous abortions. Risk to fetus includes fetal malformations and teratogenicity, effect on birth weight, neonatal withdrawal, and effect on development in later life. Pregnancy is associated with physiological changes of increased fluid volumes, and increased hepatic metabolism (mostly in second and third trimester) which unpredictably changes

blood levels of psychotropic medications. Placenta allows free passage to most psychotropics except antipsychotics and develops fully around 18th to 20th week of gestation. Hormonal and physiological changes can add to adverse effects of psycho-tropics in pregnancy.

Non-pharmacological interventions (e.g. interpersonal therapy, cognitive behaviour therapy in depression) should be considered as first line of treatment. ECT is a viable option with minimal risk for pregnant women with moderate to severe depression with suicidality or where medication is ineffective / contraindicated. When psychotropics are chosen, the following guidelines must be kept in mind:

i) Use lowest effective dose for treatment

ii) Avoid polypharmacy

iii) Caution while prescribing drugs with teratogenic risk especially in first trimester

iv) Choose medications that have been effective in the past

Antidepressants: Use of SSRIs in pregnancy is associated with pregnancy induced hypertension with or without preeclampsia, increased risk of spontaneous abortions, structural malformations (paroxetine-cardiac defects), lower birth weight, preterm birth, poor neonatal adaptation syndrome more with 3rd trimester exposure, persistent pulmonary hypertension of new born, and impairment in long-term growth, intelligence and behavioural problems. Sertraline is considered as relatively safe antidepressant if symptoms are not controlled by psychotherapy.

Benzodiazepines: While SSRIs and SNRIs are considered as first line treatment agents for anxiety disorder in pregnancy, benzodiazepines may be required in initial few weeks of treatment. Benzodiazepines are teratogenic and first trimester exposure can cause cranio-facial deformities like cleft lip and palate. All benzodiazepines are FDA Class D medication and should only be used if maternal benefit outweighs the risk. Risk of preterm birth and low birth weight is associated with benzodiazepine use. Late trimester use of benzodiazepines can cause either “floppy baby syndrome” or “neonatal withdrawal syndrome” in neonates.

Mood Stabilizers: Although the risk for major congenital anomaly with lithium is greater than that seen in general population, it is comparatively lower than that seen with carbamazepine and valproate. Use during first trimester is associated with risk of Ebstein's anomaly (1-2 per 1000), characterized by right ventricular hypoplasia and downward displacement of tricuspid valve

into right ventricle. If lithium needs to be prescribed, using minimum effective dose, sustained release preparation, avoiding diuretics and discontinuing lithium during embryogenesis and 24 hours prior to delivery should be practiced.

Use of valproate in pregnancy is relatively contraindicated due to high chance of teratogenicity (neural tube defects, cardiovascular, craniofacial, CNS and skeletal anomalies). First trimester exposure of valproate warrants fetal sonogram and echocardiogram performed at 16-18 weeks of gestation followed by amniocentesis if necessary. Supplementation of folic acid, 4 mg daily and prophylactic vitamin K, 1 gm IM in last month is indicated for pregnant women receiving valproate. Carbamazepine too carries risk of neural tube defect in the fetus as well as other teratogenic effects and is relatively contraindicated in first trimester of pregnancy.

Antipsychotics: Most antipsychotics are classified as FDA Class C medication and carry minimal teratogenic risk. Perinatal complications in new born include low birth weight and extrapyramidal symptoms. SGAs increase risk of gestational DM and metabolic syndrome. Among SGAs, quetiapine shows the lowest amount of placental passage, while olanzapine has benefit later in lactation, making it a valid choice for later part of the gestation.[20]

Psychosis in pregnancy should be promptly treated considering risk to both mother and fetus. FGAs are preferably used to treat new onset psychosis in pregnancy considering their safety data for long duration. If patient is maintained on certain antipsychotics while conceiving, it is advised to continue the same medication.[21]

Lactation

While most psychotropic medication pass through breast milk, majority produce relatively low levels in infant's plasma. While choosing psychotropic medication for lactating mothers, a drug with short half-life, no active metabolite, high maternal plasma protein binding, low passage into breast milk and low milk-to-plasma ratio should be preferred. Prescribing lowest effective dose, timing breast feeding when drug levels are lowest and monitoring the infant for side effects should be the norm in psychotropic prescription in lactation.

Among antidepressants, sertraline and paroxetine show uniformly low infant serum level and are preferred agents in lactation. Low doses of benzodiazepines without any active metabolites like lorazepam, clonazepam or oxazepam can be used for anxiety disorders. Among mood stabilizers valproic acid and carbamazepine are considered compatible to breast feeding. Amongst antipsychotic medications, olanzapine and quetiapine are categorized as acceptable drugs for breast feeding while close monitoring of infant is needed

during haloperidol, chlorpromazine and risperidone use, as they are secreted higher in breast milk.[22]

Elderly Patients

As human ages, the body undergoes several physiologic changes that alter the pharmacokinetics of psychotropic drugs. Decrease in body fat, total body water, serum albumin, hepatic blood flow, phase I metabolism and renal excretion affect drug absorption, metabolism and elimination leading to unpredictable changes in drug blood levels, their action, and adverse effects. General principles of prescribing psychotropics in elderly population are similar to those mentioned in beginning of this chapter. Starting at half of the usual dose of medication, augmenting at a slower rate, using lowest effective dose, strict monitoring for adverse effects, and avoiding polypharmacy are vital for a safe prescription of psychotropics in elderly. Beers Criteria (American Geriatrics Society) for potentially inappropriate medications in geriatric population include:

a) Tricyclic antidepressants (amitryptiline, doxepin): Anticholinergic effects, sedation, orthostatic hypotension.

b) First generation antipsychotics (thioridazine, mesoridazine): Sedation, anti-cholinergic effects.

c) Second generation antipsychotics (olanzapine, risperidone): Risk of stroke, mortality.

d) Anticholinergic drugs (benzhexol, promethazine): Promote confusion.

e) Benzodiazepines (clonazepam, alprazolam):Sedation, chances of fall.

Medications that can cause or worsen SIADH include antipsychotics, carbamazepine, mirtazapine, SSRIs, SNRIs, TCAs, Lithium[23]

Children and Adolescents

Basic principles for psychopharmacology in paediatric population include two major issues in addition to general principles:

a) Clarification of primary medical diagnosis and delineation of target behavioural/psychiatric symptoms is needed to justify the use of long-term medications. Behavioural issues in children often respond to non-pharmacological therapies and are often transient.

b) Choosing a drug best supported by evidence for use in the targeted population is mandatory as most psychotropics do not have adequate

safety data or are reported to have specific side-effects in children and adolescent population.

Various clinical conditions encountered in paediatric population and recommended psychotropics are presented below in Table 2.[24]

Table 2: Recommended Psychotropics in children and adolescents

Condition	Recommended First Line Medication	Initial Dose	Precaution
Acute Agitation	Antihistaminics-Diphenhydramine, Hydroxyzine	Diphenhydramine-5 mg/kg/day divided 6 hrly, Hydroxizine-2 mg/kg/day divided 6 hrly	Anticholinergic side effects
Aggressive Behaviour, Psychosis	Risperidone Aripiprazole Olanzapine (> 13yrs for Psychosis)	Risperidone-0.5 mg daily (for >20 kgs), Aripiprazole - 2.5 mg daily, Olanzapine-2.5 mg daily	Extrapyramidal syndrome, Weight gain, Metabolic syndrome
ADHD	Methylphenidate	2.5 mg to 4 mg Daily	Tics
Major Depression	Fluoxetine (>8years) Escitalopram (>12 years)	Fluoxetine-10 mg OD Escitalopram-2.5 mg OD	Akathisia, Suicidal thoughts
Bipolar Disorder	Lithium (>12 years) Valproic Acid Risperidone (>10years) Quetiapine (>10 years)	Lithium-30 mg/kg/day Valproic Acid-15 mg/kg/day	Weight gain, hepatic, Metabolic, Haemato-logical side effects
OCD	Fluoxetine (>8 years) Fluvoxamine (>8 years)	Fluoxetine-10 mg/day Fluvoxamine-25 mg/day	Akathisia, Suicidal thoughts
Delirium	Haloperidol	Haloperido1-0.01-0.1 mg/Kg 12 hourly	Extrapyramidal symptoms QTc prolongation

Special attention needs to be made for multi-comorbidity (diabetes, hypertension, depression, hypothyroidism and alcoholism), multidrug interactions (bronchodilators, steroids, all of which might cause depression or psychosis) and for multidisciplinary presentations like delirium, where definite treatment includes finding and rectifying the underlying cause.[25] Finally, in many clinical situations, the primary drug might need to be continued despite evidence of definite psychiatric complications (e.g. cancer chemotherapy regimens, drug resistant tuberculosis, etc.), or the psychotropic medication might be necessary despite possibility of harm (e.g. antipsychotics in peri-partum psychosis).

Pharmacotherapy in such situations requires even closer liaison with clinicians of the other specialty to decide the proper course of management. In these times, the compartmentalization of medical specialization is transcended and decisions with highest benefit for the patient are considered above and beyond that of the specialty.

Conclusion

Underlying medical conditions pose challenge in selection and prescription of psychotropic medication. Patient and disease specific factors change pharmacokinetics and dynamics of drugs resulting in alteration of drug action and side effect profile. Polypharmacy, drug interactions and metabolic status of the patient considerably influence choice of psychotropics in medical settings. Psychotropics with proven efficacy, safety and low potential for drug -drug interaction should be chosen. Effective remediation of psychiatric and behavioural symptoms definitely has a high impact on medical disease prognosis, morbidity, mortality as well as quality of life of the patient and care giver burden.

Appendix-1: Summary of psychotropic medication use in liaison settings:

	Preferred Psychotropic Medications				
Condition	**Antipsychotics**	**Antidepressants**	**Mood Stabilizers**	**Sedatives**	**Psychotropics to be Avoided**
Hepatic Diseases	Olanzapine Haloperidol Amisulpride Aripiprazole	Paroxetine Escitalopram Sertraline "need dose reduction in liver failure"	Lithium (dose adjustment in ascites) Lamotrigine	Lorazepam Oxazepam	Diazepam Clonazepam Chlordiazepoxide Valproic acid Carbamazepine TCAs with anticholinergic effects Nefazodone, Duloxetine Phenothiazines (Promethazine, Chlorpromazine, Thioridazine) Clozapine
Renal Diseases	Olanzapine Haloperidol Aripiprazole Quetiapine	Fluoxetine Sertraline Nortriptyline (Preferred TCA) Escitalopram Amitriptyline	Valproate Carbamazepine (Dose reduction in severe renal failure)	Alprazolam Lorazepam Oxazepam	Lithium Amisulpiride Risperidone (dose reduction by 50%) Paliperidone Paroxetine Venlafaxine Bupropion Mirtazapine Chlordiazepoxide Diazepam Agents with high anticholinergic effect
Cardiac Disease	Aripiprazole Olanzapine Lurasidone	Sertraline Escitalopram Mirtazapine (watch	Valproate Lamotrigine (insignificant PR	All Benzodiazepines (Avoid IV route due to Hypotension risk)	TCAs Citalopram Venlafaxine Duloxetine

Condition	Preferred Psychotropic Medications				Psychotropics to be Avoided
	Antipsychotics	Antidepressants	Mood Stabilizers	Sedatives	
		for postural drop of BP) Fluoxetine (bradycardia risk in elderly)	prolongation)	Buspirone	Bupropion Trazodone Pimozide Thioridazine Ziprasidone Haloperidol (parenteral) Quetiapine Clozapine Carbamazepine Lithium (more risk in high doses) Cholinesterase Inhibitors Stimulants
Neurological Diseases	Aripiprazole Haloperidol Trifluoperazine Olanzapine* Risperidone** used with caution Quetiapine (useful in Parkinson's disease)	Fluoxetine Citalopram (in patients on warfarin) Escitalopram Amitriptyline (neuropathic pain) Sertraline Mirtazapine	Valproate Carbamazepine (not to be used with clozapine) Lamotrigine (occasionally a/w psychosis, dysphoria)	All Benzodiazepines	TCAs# Bupropion# Clomipramine## Increases risk of seizure Venlafaxine, Duloxetine Clozapine (agent of choice in psychosis in Parkinson's disease) Chlorpromazine Buspirone
Endocrinological Diseases-Diabetes Mellitus	Aripiprazole Haloperidol Ziprasidone Lurasidone Amisulpiride	Fluoxetine Sertraline SNRIs (in neuropathy)	Valproate Lithium	All Benzodiazepines	SGAs (Clozapine, Olanzapine, Risperidone, Quetiapine) TCAs (use only in neuropathic pain)

Condition	Preferred Psychotropic Medications				Psychotropics to be Avoided
	Anti-psychotics	**Anti-depressants**	**Mood Stabilizers**	**Sedatives**	
Respiratory Diseases	Aripiprazole Olanzapine Risperidone (Discontinuation of antipsychotics with anticholi-nergic effects causes cholinergic rebound)	SSRIs generally safe	Valproate Lithium	Buspirone Zolpidem Lorazepam Oxazepam	Longer acting Benzodiazepines (all benzos contraindicated in sleep apnoea) Propranolol Clozapine High Potency FGA causing Laryngeal dystonia, Tardive dyskinesia Carbamazepine (pulmonary eosinophilia) Opioids
Pregnancy	Haloperidol Olanzapine	Sertraline Escitalopram	Lithium Lamotrigine	Buspirone Clonazepam (short duration, Avoid close to delivery)	Paroxetine Valproate Carbamazepine Low Potency Antipsychotics Long term use of Benzodiazepines
Lactation	Risperidone Quetiapine Olanzapine	Sertraline Paroxetine	Valproic Acid	Alprazolam Lorazepam	Duloxetine Doxepin Chlorpromazine Long acting Benzodiazepines
Elderly	Olanzapine Quetiapine	Sertraline Escitalopram Mirtazapine	Valproic Acid Lithium	Lorazepam Melatonin Zolpidem	TCAs (Amitriptyline, Doxepin) Low potency Antipsychotics (Thioridazine, Chlorpromazine) Long Acting Benzodiazepine Anticholinergics
Children	Risperidone Aripiprazole Olanzapine	Fluoxetine Sertraline Fluvoxamine	Valproic Acid Lithium	Diphenhydramine Melatonin	Paroxetine Venlafaxine Clozapine

References

1. Sockalingam S, Tan A, Abbey SE. Psychopharmacology in the medically ill. In: Psychosomatic Medicine: An Introduction to Consultation-Liaison Psychiatry. Cambridge University Press 2010;32- 50.

2. Suzuki E. [Drug Interactions and Pharmacokinetics of Psychotropic Drugs]. Seishin Shinkeigaku Zasshi 2015;117:49-55.

3. Wang SM, Han C, Bahk WM, Lee SJ, Patkar AA, Masand PS, et al. Addressing the side effects of contemporary antidepressant drugs: a comprehensive review. Chonnam Med J 2018;54:101-112.

4. Telles-Correia D, Barbosa A, Cortez-Pinto H, Campos C, Rocha NBF, Machado S. Psychotropic drugs and liver disease: A critical review of pharmacokinetics and liver toxicity. World J Gastrointest Pharmacol Ther 2017;8:26-38.

5. Flanagan RJ, Dunk L. Haematological toxicity of drugs used in psychiatry. Hum. Psychopharmacol 2008; 23(Suppl):27-41.

6. Yeh CX Chen CK, Hsu HJ, Wu IW, Sun CY, Chou CC, et al. Prescription of psychotropic drugs in patients with chronic renal failure on hemodialysis. Ren Fail 2014;36:1545-9.

7. Abosi O, Lopes S, Schmitz S, Fiedorowicz JG. Cardiometabolic effects of psychotropic medications. Horm Mol Biol Clin Investig 2018;36(1): 20170065

8. Khasawneh FT, Shankar GS. Minimizing Cardiovascular adverse effects of atypical antipsychotic drugs in patients with schizophrenia. Cardiol Res Pract 2014; 2014.

9. Beach SR, Celano CM, SugrueAM, Adams C, Ackerman MJ, Noseworthy PA, et al. QT Pro longation, Torsades de Pointes, and Psychotropic medications: a 5-year update. Psychosomatics 2018;59: 105- 22.

10. Halvorsen T, Martinussen PE. Benzodiazepine use in COPD: Empirical evidence from Norway. Int J COPD 2015;10:1695- 702.

11. Hill K, Geist R, Goldstein RS, Lacasse Y Anxiety and depression in end-stage COPD. Eur Respir J 2008; 31:667-77.

12. Pisani F, Oteri G, Costa C et al. Effects of psychotropic drugs on seizure threshold. Drug safety 2002;25: 91-110.

13. Robinson RG, Jorge RE. Post-stroke depression: A review. Am J Psychiatry 2016;173:221- 31.

14. Jennum P, Baandrup L, Iversen HK, Ibsen R, Kjellberg J. Mortality and use of psychotropic medication in patients with stroke: A population-wide, register-based study. BMJ Open 2016;6:e010662.

15. Ravona-Springer R, Davidson M. Considerations in psychotropic treatments in dementia-can polypharmacy be avoided? Int. J. Neuropsychopharmacol 2014;17:1107-17.

16. The Lancet Neurology. Difficult choices in treating Parkinson's disease psychosis. Lancet Neurol 2018; 17(7): 569.

17. Khalil RB, Richa S. Thyroid adverse effects of psychotropic drugs: A review. Clin. Neuropharmacol 2011;34:248-55.

18. Holt RIG. Association between antipsychotic medication use and diabetes. Curr Diab Rep 2019; 19:967.doi:10.1007/S11892-019-1220-8.

19. Miyamoto BE, Galecki M, Francois D. Gui delines for antipsychotic-induced hyperprolactinemia. Psychiatr Ann 2015;45:266- 72.

20. Chandra P, Babu G, Desai G. Antipsychotics in pregnancy and lactation. Indian J Psychiatry 2015;57:303.

21. Niethe M, Whitfield K. Psychotropic medication use during pregnancy. J Pharm Pract Res 2018;48:384-91.

22. Hardy LT, Reichenbacker OL. A practical guide to the use of psychotropic medications during pregnancy and lactation. Arch Psychiatr Nurs 2019; 33:254-66.

23. Ćurković M, Dodig-Ćurković K, Erić AP, Kralik K, Pivac N. Psychotropic medications in older adults: a review. Psychiatr Danub 2016;28:13- 24.

24. Asogwa K, Okudo J, Idowu J. The use and effectiveness of pro re nata psychotropic medications in children and adolescents: A systematic review. Indian J Psychiatry 2017; 59:264-274.

25. Shafiekhani M, Mirjalili M, Vazin A. Psychotropic drug therapy in patients in the intensive care unit - usage, adverse effects, and drug interactions: A review. Ther Clin Risk Manag 2018; 14: 1799- 812.

A

B

C

D

E

F

G

H

I

L

M

N

O

P

Q

R

S

T

U

V

Handbook of Consultation Liaison Psychiatry

Consultation liaison (CL) psychiatry is a subspecialty of psychiatry which works at the interface of psychiatry and other medical and surgical disciplines. Unfortunately, CL psychiatry has not been given due signifi-cance in India and other low-and middle-income countries due to lack of adequate Mental health resources. The subspeciality can't be ignored considering that more than 20% of patients in any nonpsychiatric setting, both outpatient as well as in patient have been found to suffer from mental health problems, and often remain unrecognized and untreated.

The book "Handbook of Consultation Liaison Psychiatry" discusses various facets of CL Psychiatry and covers a wide range of topics like contextual aspects of consultation liaison psychiatry in clinical practice, medically unexplained symptoms, chronic medical illness, managing agitated or suicidal patient, stress, death and dying, substance use, transplants and communication. The handbook would be useful for not only psychiatrists but also internists, surgeons and other specialists. Authors of various chapters are accomplished leaders in the field of psychiatry in India.

About the Editors

Editors of the book, Rakesh K Chadda, Mamta Sood and Siddharth Sarkar are senior faculty members at the Department of Psychiatry and the National Drug Dependence Treatment Centre (NDDTC), All India Institute of Medical Sciences (AIIMS), New Delhi and have vast clinical and teaching experience in the field of consultation liaison psychiatry. Rakesh K Chadda is Professor & Head, Department of Psychiatry and Chief, NDDTC. Mamta Sood is Professor of Psychiatry and Siddharth Sarkar is Associate Professor of Psychiatry.

9 789354 079849

An Official Publication of
Department of Psychiatry & NDDTC, AIIMS - New Delhi
Indian Association for Social Psychiatry

Cover Designed by
Dr Koushik Sinha Deb