

Mental Illness and Medical IllnessDr. P. P. Sudhan Raj^{1*}, Dr. Lakshmiprabha², Dr. S. Nambi³¹Postgraduate, Department of Psychiatry, Sree Balaji Medical College & Hospital, Chennai, India²Senior Resident, Department of Psychiatry, Sree Balaji Medical College & Hospital, Chennai, India³Professor & HOD, Department of Psychiatry, Sree Balaji Medical College & Hospital, Chennai, India**Review Article*****Corresponding author**

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**Abstract:** Mental health problems can cover a broad range of disorders, but common characteristic is that they all affect thought process, mood, personality and social interactions. Mental health disorders occur in a variety of forms and symptoms can overlap, making disorders hard to diagnose.**Keywords:** Schizophrenia, depression, comorbidity, HIV.**INTRODUCTION****Medical illness and schizophrenia**

Mortality rates in persons with schizophrenia are 2-4 times higher than in the general population. Average life span is up to 25 yrs shorter than in general population. Compared to general population, persons with schizophrenia have higher rates of cardiovascular disease (CVD) and they die more frequently due to CVD, especially sudden death. Risk factors are: Smoking, obesity, diabetes, dyslipidemia, lack of exercise and the cardiac side effects of some antipsychotic drugs. Polydipsia is a poorly understood complication of schizophrenia that can cause (Potentially fatal) hyponatremia.

Causes of poor physical health in schizophrenia patients

- Excessive smoking (70 - 80 %) are chronic smokers.
- High prevalence of sedentary habits and poor hygiene.
- Less frequent medical follow up and severity of medical conditions.
- Inferior quality of medical care received by schizophrenia patients.
- Side effect profile of antipsychotic medications.

Common general medical conditions associated With schizophrenia

- Tuberculosis, Anemia, Malnutrition, Hepatitis, GI infections, Skin lesions- scabies, eczema and others
- The atypical antipsychotics appear to be associated with the development of glucose intolerance, new onset DM, DKA and exacerbation of existing DM. These disturbances in glucose metabolism have their own medical consequences, including cardiovascular disease, cerebrovascular disease, retinopathy, neuropathy and nephropathy all of which can lead to considerable mortality and morbidity.
- Thus to minimize mortality and morbidity associated with the use of the atypical antipsychotic medication, screening and monitoring for DM should become priority
- Approximately 15% of schizophrenia develop diabetes.
- Concentration dependent increase in circulating insulin levels and direct stimulating effects on pancreatic insulin secretion.

Two most important agents of interest:

- **CLOZAPINE**- Incidence – 20 to 50%. Can occur as early as 8 weeks within initiation of treatment. CATIE trial- a mean increase in FBS of 9.4mg/dl and HbA1c- 0.11%
- **OLANZAPINE**- highest rate of risk- 70 %. CATIE trial- a mean increase in FBS-13.7mg/dl and HbA1c-0.40%

METABOLIC SYNDROME**Elevated waist circumference**

- MEN: more than 40 inches(102 cm)
- WOMEN: more than 35 inches(88 cm)

Elevated triglycerides

- More than 150 mg/dl

Reduced hdl

- MEN: less than 40mg/dl
- WOMEN: less than 50mg/dl

Elevated blood pressure

- More than 130/85 mmHg

Elevated fastic glucose

- More than 100 mg/dl

Neurological comorbidity in schizophrenia

Schizophrenia has been associated with various neurological manifestations. Neurological features may have various forms of association with schizophrenia, they may be an intrinsic part of the disease, they may be a reflection of other co morbid diseases that complicate the clinical picture, or they may be characteristics of specific diseases not yet distinguished from schizophrenia. Certain neurological conditions can occur in greater frequency among patients with schizophrenia than in general population

Movement Disorders

Akathisia, acute dystonia, tardive dyskinesia, and drug induced Parkinsonism. Decreased motor activity-retardation, poverty of movement, stupor, posturing, motor blocking, automatic obedience, negativism, ambitendency

Increased motor activity-excitement, tremor, stereotypies, mannerisms, perserverative movements, impulsive movements

Postural disturbance- rigidity, catatonia, clumsiness

Neuroleptic malignant syndrome

- Uncommon, severe, potentially fatal psychiatric emergency. It is a diagnosis of exclusion.
- 0.07 to 1.1%
- All antipsychotics can cause NMS. No specific antipsychotic risk is identified.
- Risk factors- dehydration, low iron, exhaustion, restraint, previous history of NMS
- Severe rigidity, tremor, fever, rigidity, altered mental status , autonomic dysfunction. WBC, elevated CK, elevated transaminases, lactate dehydrogenase , metabolic acidosis and low iron concentration.

Seizures

- Common seizure type-tonic- clonic.

- Myoclonic seizures without loss of consciousness are also reported.
- Risk factors- epilepsy, brain trauma, brain mass, electrolyte disturbance, high dose of antipsychotics, substance abuse
- Drugs like clozapine may induce seizure

Prolactin and endocrine related disorders

- Neuroendocrine abnormalities are common in patients with schizophrenia contributing to the risk of a variety of medical complications, including gynecomastia, galactorrhoea, menstrual irregularities and impaired sexual function
- Dopamine antagonism of the tuberoinfundibular tract affects the functions of the hypothalamic-pituitary-gonadal axis
- Antipsychotic medications induce hyperprolactinemia both the short term and chronic medical consequence of hyperprolactinemia and related hypogonadism are of clear clinical concern

Agranulocytosis and other blood dyscrasias

- Most antipsychotic induced hematological side effects are rare (except clozapine) and are poorly understood. The mechanism is currently unknown.

Medical illness and Depression

- Depression is the leading cause of significant morbidity worldwide.
- About 10-15% of the population will suffer from a depressive illness during their life time. The World Health Organization (WHO) projects that in 2030 depression will be the second-highest cause of “years lost due to disability” and early death.

The cost of treatment of depression & the burden of the care-givers is enormous & remains unmatched by any other physical illness.

Lifetime prevalence of major Depression in chronic Medical Illness:

- Healthy controls - 6.9%
- Diabetes-14.4%
- Arthritis- 14.3%
- Heart Disease-18.6%
- Hypertension-16.4
- Chronic lung disease-17.9%

Depression and neurological disorders

Prevalence rate

1. Epilepsy	20 - 50%
2. Post stroke depression	30 - 50%
3. Alzheimer’s disease	10 - 20%
4. Parkinson’s Disease	5 -25% (MDD) 25 – 50% (MINOR)
5. Multiple sclerosis	20 - 30%

Despite the fact that many patients with depressive disorders seek help in primary care, general

practitioners still have difficulties in recognizing and treating depression. The current prevalence of major

depression in primary care is approximately 10 to 15 percent. Severe major depression is much more common among those with comorbid chronic medical disorders, but still remain unrecognized in primary care.

Relationship between Depression and Physical disorders

- Depression contributes directly or indirectly to the occurrence or persistence or exacerbation of several physical disorders.
- Many physical disorders especially, severe or life threatening or long standing causes depression as a reaction to the illness per se.
- Many disorders have depression as a major manifestation in their own right eg: hypothyroidism.
- Symptoms of major depressive disorders are shared by many physical disorders & leads to misdiagnosis eg: anorexia in cancer patients; fatigue in both patients of chronic liver disease & depression.

Peptic Ulcer

- Depression has been shown to precipitate mucosal injury in vulnerable patients & impairs healing compared to non-depressed patients. Health-related quality of life is impaired in people with gastric or duodenal ulcers, which are exacerbated by anxiety or depression [1]. Depression also adversely affects the outcome of standard treatment for peptic ulcer [2].

Hypertension

- Since hypertension is a long-standing disorder requiring lifelong treatment, it is often punctuated by the depressive episodes as a reaction to the illness itself. The so called type A personality people are not only at risk of developing hypertension but also depression because of their psychological make-up like “low frustration tolerance”. The drugs used in treating hypertension like beta-blockers & Ca-channel blockers are well known to cause depression.

Cardiovascular Disease

- Depression - most common psychiatric disorder in Coronary Artery Disease (CAD) patients (Glassman and Shapiro 1998). Depression - increases the risk of development and progression of CAD as an independent variable. Doubling of risk for adverse coronary disease-related outcomes, including MI, revascularization procedures for unstable angina, and death, are demonstrated in association with depression. Co-morbid major depressive disorder carry 3.5- to 6.6-fold increased risk of death in 6- and 18-month follow-up of MI patients.
- Severe depression 6 months after CABG surgery, or persistence of even moderate depressive

symptoms beginning before surgery at 6-month postoperative follow-up, predicts increased risk of death over 5-year follow-up.

- The SADHART & ENRICH trials – treatment of depression improves the outcome of CAD, in terms further MI, CCF & death

Diabetes

- Diabetes doubles the odds of depression independent of the study design, source of patients, and method of assessing depression. Increased risk of elevated depressive symptoms in patients with “treated type 2 diabetes” but not with untreated individuals
- Patients with depressive disorders appear to develop worse glycemic control and have a heightened risk of diabetes complications such as retinopathy, nephropathy, hypertension, cardiac disease, and sexual dysfunction [3] Standard treatments for depression not only lead to improvement in depressive symptoms but also can lead to better glycemic control [4].

Thyroid Diseases

- Almost all patients of hypothyroidism have concurrent symptoms of depression [5]. Subclinical hypothyroidism is now recognized as a potential risk factor for depression [5].
- Prevalence more in females than in males.
- Thyroid hormones directly regulate the mood through the blood stream & also through the hypothalamic-pituitary-thyroid axis.
- Studies have shown that administration of adjunctive Thyroxine is effective in treatment resistant depression & also in depressed euthyroid patients!

Adrenal Gland Disorders

- The relationship between stress, adrenal hormones, pituitary ACTH & hypothalamic CRH is well known.
- CRH & ACTH acts as neurotransmitters in the brain especially in those areas pertinent to mood regulation & bio-rhythms.
- Depression dysregulates the fine balance of this relationship & sets a vicious cycle. What starts as a reactive depression later ends being endogenous depression also almost like kindling in epilepsy.
- Depression is the most prevalent psychiatric disturbance associated with Cushing’s syndrome in up to 50%–70% of cases [6].
- Two possible mechanisms:
- Depression in patients with Cushing’s disease may be caused by hypothalamic dysfunction [6],
- Elevated cortisol levels may directly cause depression in CS [6].
- Addison’s disease: depression has been observed in 30%–50% of patients [7].

Cancer and Depression

- Malignancies are often accompanied by a depressive state.
- Depressive symptoms may represent a normal reaction, a psychiatric disorder, or a somatic consequence of cancer or its treatment.

It has been estimated that 25% of cancer patients are likely depressed enough at some point in the course of disease to warrant evaluation and treatment.

- The patients are vulnerable to depression for various reasons
- Metabolic or endocrine alterations.
- Treatment with debilitating chemotherapy, immune response modifiers, and
- Chronic pain and hopelessness associated with the primary condition.
- Depression in malignancies decreases the quality of life of the patient, often impairing their response to the illness, adhere poorly to treatment schedules and other recommendations; some may have reduced chance of survival [8].

Psychological Aspects of HIV

- Infection with HIV is more than just a biologic event. Personal and societal reactions to HIV infection/disease bring to the fore significant psychological and social implications.
- An Individual with HIV faces the specter of infection, chronic illness, pain and loss.
- The person is confronted with one's own morality.
- The issues of death and dying become paramount.
- Societal attitudes and moral judgments surrounding the predominantly sexual nature of HIV transmission have tended to stigmatize HIV/AIDS.
- This in turn, had the effect depriving people of their traditional social support networks, with the net effect of exacerbating their psychological, social and interpersonal problems.
- The role of stress in precipitating and perpetuating a medical disorder is a well-known fact.

Psychiatric Aspects of HIV & AIDS – Aetiology

Individuals with HIV present with a variety of psychiatric syndromes much greater than the general population. Psychiatry illnesses may predispose an individual to becoming infected with HIV and HIV infection may be pre-disposing factor to cause mental illness.

HIV related Mental Health Problems

Organic Mental Disorder

- Delirium
- Mild Neuro Cognitive Disorder
- Dementia

Functional

- Anxiety Syndrome
- Mood Disorders
- Severe Mental Illness Psychosis
- Substance Use Disorders
- Sleep Disorders
- Pain Disorders

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