

Drug Utilization Study of Psychotropic Drugs in a Psychiatric Outpatient Department in a Tertiary Care Hospital: A Covid-19 Perspective

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ABSTRACT

Drug utilization study is an effort to generate data based on statistics and records of prescriptions, drug therapy regimens and widespread use of prescribed drugs which gives an idea of its potential utilization, cost effectiveness and the optimum dosage of the drugs. Improvements based on rationale drug prescribing patterns, its distribution, the marketing strategies for maximum consumption and cost of drug treatment in a hospital of tertiary care may help in enhancing the drug-related policies and consequently an efficient health-care provision to the people. This study deals with the retrospective data generation from the period of the Covid-19 pandemic, which not only was a biological catastrophe but mental and emotional disbalances among the masses due to companionship and financial losses. Psychotropic polypharmacy is a serious issue in psychiatric treatment, and it can lead to harmful medication effects in patients. The availability of these medications at a tertiary care hospital at the required time to treat the patients and the correct dosage amount for the utilization of the optimum potency and thus getting the best results is also a by-product of this drug utilization study. A small-scale evidence-based pharmacoepidemiologic study of the drug utilization of prescribed daily dose of psychotropic drugs in a hospital of tertiary care, its safe dosage patterns may aid in the better psychiatric care of people. Anxiety problems prompted more people to seek assistance than mood disorders. The COVID-19 effects on mental health are as expected, highlighting the need of effective and accessible treatments. Increased diagnoses across the board in every anxiety disorder category which are most common and it's uncertain if post-COVID-19 anxiety will take on a profile similar to post-traumatic stress disorder. In addition, rates of the diagnoses of insomnia were found to be much higher, which is consistent with expectations that COVID-19 infection may cause circadian disruptions. As a result, the disease pattern was wide and non-uniform.

Key words: Drug utilization, Rationale drug prescribing pattern, Pharmacoepidemiologic study, Prescribed daily dose, Psychotropic drugs

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INTRODUCTION

The COVID-19 epidemic is a worldwide health emergency that necessitates a quick shift in traditional treatment methods in a variety of medical fields, including psychiatry. Coronavirus illness is a systemic infection that can affect numerous organs and functions, and interstitial pneumonia is the most common symptom, resulting in severe respiratory distress that need extensive life support in the majority of patients. As the danger of infection (includes respiratory diseases

like pneumonia) persists, there are obstacles in the way of medicaments in a timely manner. People with mental illnesses are more susceptible to the new coronavirus COVID-19 than the general population, owing to their seclusion in psychiatric wards and the anxiety, sadness, chaos, and terror that accompany the pandemic process. Patients who test positive for COVID-19 often experience anxiety, despair, shame, stigma, and wrath.; however, the psychological impact of COVID-19 is unknown. As a result, emotional issues may lower immune health and obstruct recovery; a new drug administration may be required to begin as a new medication therapy for COVID-19 individuals who never have had a psychiatric condition.

When the symptoms of an emotional, mental or psychiatric disease are severe and interfering with basic system functioning, psychotropic medication is utilized. These medications are sometimes prescribed for medical and neurological conditions. All medications

must be closely monitored and evaluated in terms of cost. To avoid improper usage, significant adverse effects, and life-threatening effects, clinical indication and monitoring are required. The prevalence of psychotropic medication use is a topic that both the general population and the medical community are concerned about. Anxiolytics are overused in the general population, according to studies. This practice is linked to the problems of addiction and withdrawal. Age, gender, and geographical region all influence how these medications are used. In many situations, however, these medicines are used unethically, with few diagnostic indications and little knowledge about their effects. Anti-anxiety and antipsychotic medications were utilized as adjuncts in the treatment of severe pain in some cases. Psychotropic medications are often given by a psychiatrist or a general practitioner, although they can also be prescribed by internists, family practitioners, gynecologists, and pediatricians [1].

They operate by changing the amounts of brain chemicals called as neurotransmitters such as GABA, dopamine, norepinephrine, and serotonin.

Classification of these drugs constitutes five major legal psychotropic classes of medications: Anti-anxiety agents, mood stabilizers, antidepressants, stimulants and antipsychotics [2].

Long-term psychotropic drug side effects (metabolic syndrome, extrapyramidal symptoms, electrolyte imbalance, and so on), health issues affecting physique (gynaecomastia, obesity, decreased sexual activity, and so on), substance abuse addictions (nicotine, CBD oil, alcohol, marijuana, and so on), and non-adherent treatment drugs are all major issues in the bio-war against COVID-19 [3].

In response to this global health disaster, international as well as federal health organisations utilized quarantine and lockdown measures to restrict the virus's spread. Other tactics included airline cancellations, the avoidance of large gatherings, the mandatory use of face masks in many nations, social distance, working from home, tutoring of children at home, and health instructions to stay at home. Although the WHO and global health officials are striving hard to contain the pandemic, such a time of public health emergency has far-reaching consequences for public health and well-being, as well as psychological discomfort and symptoms like distress, anxiety, and concern among the community.

Quarantine is a useful method for infectious disease outbreaks across the world in the past; nonetheless, it is an unpleasant experience for the general population nowadays. Movement restrictions, separation from friends and family, limited freedom, and the fear of an unknown future are all factors that might exacerbate negative psychological consequences. Multiple stressors have been proven in the literature to worsen poor mental health, including extended quarantine durations, fear of transmission, anxiety, loneliness, restlessness,

constraint, insufficient information, and economic loss [4].

Other characteristics of a pandemic outbreak include stigma and fear. It can create significant hurdles to accessing healthcare, social disengagement, distrust in health authorities, and distorted public perceptions of danger, leading to widespread fear among residents and unbalanced deployment by politicians and health experts who have been squandering healthcare resources.

Statistics show that vulnerable populations confined to their homes during a pandemic may suffer health consequences. Children, in particular, become less physically active as a result of increased screen time, unpredictable sleep patterns, and poor diets, leading in weight gain and decreased cardiorespiratory fitness. There are also additional direct and indirect consequences of school closures, such as unanticipated childcare duties, which are especially prevalent in healthcare vocations. This might be linked to the state of things in most nations across the world, considering the aspects of child care, in terms of adult care and geriatric care [5].

Psychiatric medication and COVID-19 medications interact largely through two mechanisms: first, pharmacokinetic Drug-Drug Interactions (DDIs), in which single drug influences the disposition of another, and second, adverse effect compounding. The enzyme cytochrome P450 is involved in the metabolism of drugs and their interactions. The liver CYP iso enzymes that metabolize the tricyclic antidepressants 2D6, 1A2, 3A4, and 2C19, for example. The bulk of first- and second-generation antipsychotics are metabolized by the cytochrome P450 system, which includes the enzymes 2D6, 1A2, and 3A4. SSRIs are cytochrome P450 blockers, which might cause DDIs by changing the blood levels of medications activated or metabolized by these enzymes. As a result, pharmacokinetic interactions may occur when medications for COVID-19 treatment are combined because of their metabolism in the liver and propensity to alter cytochrome P450 function [6].

Drug utilization study in the Covid-19 era thus will help us identify the marketing and usage of drugs by a specific group of people, adverse effects and drug interactions of psychotropic drugs with the Covid-19 treatment medications and the statistical analysis of the advantages and disadvantages for further usage of the same drugs. Drug usage research combined with pharmacological analysis can lead to more premium medicine use as well as better Pharmacoeconomic approach application, both of which contribute to more safe and effective medication use [7].

Background

Due to the complicated co-morbidities and different medical condition's possible interactivity with medical therapies, people with COVID-19 may commonly need the supplementation of psychiatric medicines, but they are also at a higher risk for safety concerns [8].

In reaction to being COVID -19 positive, the necessity for

forced seclusion, the presence of very stressful medical symptoms, and the probable danger of mortality, people with COVID-19 may commonly have a new start or aggravation of mental indications. Intensive care and medical experiments providing medical therapies with side effects of psychotropic treatment may also be a risk factor for the emergence of psychiatric symptoms and decreased states of consciousness, such as dementia and mental confusion. Although early, epidemiologic data revealed that up to one out of every four individuals may suffer anxiety or depression symptoms, and around 15% may experience altered consciousness states.

People with C may need to be treated with medicines that address mental symptoms as a result of these factors. These medicines are linked to a variety of safety issues in the general population, but their usage in persons with COVID-19 may be especially difficult. Psychiatric medicines may act with COVID-19 therapies, and some of their side effects may exacerbate the underlying medical condition's 'course and prognosis. In this situation, the goal of these evidential reviews and experimental suggestions are to raise awareness among on-duty clinicians about clinically relevant safety problems associated with psychotropic drug usage in persons with COVID-19, as well as potential treatment options.

Several psychiatric medicines have been reported to inhibit viral replication of the coronaviruses MERS-CoV and SARS-CoV-1 in vitro, supporting the idea that psychotropic treatments protect patients from symptomatic and virulent COVID-19 strains. The SARS-CoV-2 has numerous characteristics in common with the coronavirus family, as well as phylogenetic similarities with the SARS-CoV-1 that triggered the outbreak in 2002-2003. As a result, one or more psychiatric medicines that have been demonstrated to be beneficial against MERS-CoV and SARS-CoV-1 are likely to be effective against SARS-CoV-2 as well [9].

Review of literature

Mudhaliar, et al. [10] undertook six-month retrospective research at a tertiary care hospital in south India to analyse the usage of antipsychotics and prescribing patterns, which included prescriptions from patients of all ages and both sexes suffering from psychiatric disease and receiving at least one psychotropic medicine.

In a total of 150 cases evaluated, 46 percent were of schizophrenia, with males (60.67 percent) having an increased rate of psychiatric disease and the majority of patients being between the ages of 29 and 39. (54.67 percent). Psychotropic medicines accounted for 72.67 percent of the 355 prescription pharmaceuticals in this research. The average number of drugs per prescription (2.37 percent), average number of psychotropic drugs per prescription (1.72 percent), psychotropic drugs prescribed as Fixed Dose Combinations (FDCs) (26.36 percent), and percentage of drugs prescribed by generic name (26.36 percent) were all higher

than the national average, according to World Health Organization/International Network for Rational Use of Drugs (INRUD) drug use indicators (91.08 percent) In our study, psychotropic medications were used in the treatment of 48.09 percent of the patients with schizophrenia; diazepam (17.06 percent) has been the only psychotropic medication used in the monitoring of any and all three psychiatric disorders, and the study revealed a higher use of psychotropic drugs as FDCs (25.98 percent) in the management of schizophrenia [6]. The research called for a more logical use of psychotropic medications, with less variations owing to patients' 'socioeconomic position and healthcare professionals' 'prescribing practices.

Chaturvedi R, et al. [1] conducted prospective cross-sectional research at the OPD of psychiatry of L. N. Medical College, Bhopal, for six months (December 2014 to May 2015). The research comprised patients of various ages and genders, with 600 prescriptions chosen at random. Antipsychotic medications were the most often given psychotropic drugs in different mental illnesses (75.33 percent), followed by antidepressants (48.33 percent) and anxiolytics (48.33 percent) (26 percent). Antipsychotics are the very commonly given antipsychotic medications in individuals with psychotic disorder, according to this study. The most prevalent ailment is depression. Men between the ages of 21 and 40 had a higher prescription rate.

Ubedulla, et al. [11] collected data on how geriatrics are the most frequent users of prescription medications, putting them at risk for drug interactions and hazardous drug responses. The current study aims to determine the medication usage pattern of psychiatric medicines among geriatrics in a tertiary care hospital's 'psychiatry out-patient department (OPD). Methods: Patients with psychiatric illnesses who were prescribed at least one psychotropic medication had their prescriptions gathered. Patients either male or female with age 60 or above had their prescriptions categorised and analysed individually using WHO core prescribing factors.

According to the findings, geriatric medications accounted for 18% of all prescriptions. The most frequent mental illness observed was depressive disorders (38.89 percent). 237 (81.44 percent) of the 291 medications given in geriatrics were psychiatric drugs. Antipsychotics (39.24 percent of all psychotropic medicines administered) were one of the most often prescribed group of drugs. The average number of psychotropic medications prescribed per prescription was 2.19, with pharmaceuticals prescribed by generic name accounting for 2.06% of the total from NLEM (2015) the prescribed number of drugs accounted for 41.77 percent. More than one medication was found in 86.11 percent of prescriptions, while FDCs were found in 33.33 percent of prescriptions.

The use of WHO prescribing indicators to analyse prescriptions revealed certain variations from the standard that may be addressed. In this investigation, a

polypharmacy tendency was discovered. In comparison to the other reference studies, prescription given from NLEM and by generic name was both decreased. Proper methods to address the deficiencies identified in this study can guarantee that medications are used appropriately.

Zipursky, et al. [12] from April 2018 to September 2020, performed a cross-sectional study in Ontario, Canada, to determine the monthly percent of nursing home residents taking psychotropic medicines like a percentage of the monthly number of individuals completing a prescription for whichever substance. As of March 1, 2020, there were 77 291 people in the province's 623 registered nursing homes, receiving personal and nursing care, subsidized housing, and prescription drugs under a publicly financed long-term care programme. On March 14, 2020, all Ontario nursing homes implemented restrictions on visiting, absences (i.e., leaving the nursing home), congregate meals, and group activities. Because there was no interaction with nursing home patients and anonymity was guaranteed, the study was authorized by the University of Toronto's 'research ethics board, which disregarded the requirement for informed permission. For cross-sectional studies, the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) reporting standard was used.

According to the data drawn from the population in the research study of patients in nursing homes entirely in Ontario, Canada, an increase in psychotropic medication prescribing during the start of the COVID-19 epidemic, which lasted until September 2020 was discovered. Although the increases in prescription were minor in absolute terms, they were out of proportion to predicted traditional and evidence based prescribing patterns from April 2018 to February 2020, and they were unique from other changes in prescribing medicines throughout the pandemic.

Objective

To collect data about the drug utilization and distribution of psychotropic medications advised to patients in the Out-patient Department of Psychiatry who have

Psychiatric illness due to the stress of the pandemic.

Recovered or having Covid-19 seeking psychiatric medication.

METHODS

Retrieval of data from the hospital software of prescriptions that include psychotropic drugs prescribed to patients related to Covid-19.

Study area

Department of Psychiatry of a Tertiary Care Hospital.

Study population

People of all ages coming to psychiatric OPD with Covid-19 related psychiatric problems and people

having/recovered of Covid-19 having psychiatric problems.

Study design

Hospital based observational and retrospective study.

Study duration

September 2020 to November 2020.

Inclusion criteria

Cases

People of all ages.

Both gender.

Both diagnosed cases of Covid-19 on RT-PCR OR non diagnosed.

Exclusion criteria

Cases

Seeking psychiatric therapy for non-Covid-19 related problems.

Statistical analysis

Data will be retrieved and accessed from the Hospital Information System Software in the Pharmacology Department. A table showing the classes of psychotropic drugs and its percentage use will be created with the data. A pie chart will be made for the different classes of psychotropic drugs and its distribution in prescribing to the patients. The analysis will help understand the prescribing patterns, the rational use of drugs and the percentage of its utility and effectiveness.

RESULTS

Expected results of the drug utilization study is a statistical proof of the medications of mental disorders in the outbreak of COVID-19, how wide ranged was its effect on the population, psychologically and how the steroids and symptomatic treatments of COVID interacted with the side effects, absorption and mechanism of action of psychotropic drugs. This will form evidential research in order to educate professional practitioners on how to assess the threat of psychotropic-related adverse reactions and what steps to take to properly reduce that threat, such as whether to avoid, discontinue, substitute, or modify the dosage of the drug [13-18].

CONCLUSION/STUDY IMPLICATIONS

This drug utilization study of psychotropic drugs will help us to know the drug interactions, the efficacy of the drugs of psychotropic medications given to Covid affected or unaffected individuals, the difference in the response to the drug, and the indications of the prescribed drug.

Psychopharmacology is a fast-growing area that is questioning established treatment paradigms and continuously looking for novel medicines to treat mental

illnesses. On the use of psychotropic medications in patients in the pandemic scenario, there is a paucity of research. As a result, the goal of this study was to contribute to what was already known about how psychotropic medications were used and to aid in further researches that may take into account similar aim as this drug utilization study.

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