Original Article

Prevalence Of Psychotropic Polypharmacy- Evaluation On Advocation And Limitation

Rachamsetty kavya[1*], Senthil Raj R[2]

[1]Research Scholar, Dr. MGR Educational & Research Institute, Velappanchavadi, Chennai-600077, Tamil Nadu, India
[2]Department of Pharmaceutics, Dr. MGR Educational & Research Institute, Velappanchavadi, Chennai-600077, Tamil Nadu, India
[*]Corresponding Author: kavyapearl123@gmail.com;
DOI: 10.47750/pnr.2022.13.S10.313

Abstract

Patients with newly diagnosed chronic diseases, notably cancer, frequently utilize psychiatric medicines for their mental support. A minimum of 90 days of continuous usage of two or more kinds of psychotropic medications was required to be considered psychiatric polypharmacy. However, little is known about how psychotropic polypharmacy affects the use of healthcare services during the first stage of medical treatment. Antipsychotic Polypharmacy is often combined of CNS stimulants or atomoxetine, antidepressants (selective serotonin reuptake inhibitors, selective serotonin norepinephrine reuptake inhibitors, serotonin modulators, and tricyclic antidepressants), antipsychotic agents (first- and second-generation agents), lithium, anticonvulsant mood stabilizers (such as divalproex, oxcarba. As operational definitions of polypharmacy became stricter, the observed rate of polypharmacy decreased. The results imply that when comparing rates of polypharmacy among studies with different operational definitions, significant discrepancies occur. Even while community-dwelling older people with mental problems usage of psychotropic polypharmacy is lower than in nursing homes and home healthcare settings, thorough monitoring is still necessary to prevent significant side effects in this sensitive group. This review covers the incidence of polypharmacy in various nations while taking antipsychotics as well as other medication types. More research is required to completely understand the long-term psychotropic polypharmacy use pattern, the clinical justifications for its use, and the effects of this therapeutic approach when applied to patients with a variety of chronic illnesses and mental disorders.

Keywords: Antipsychotic polypharmacy, CNS stimulants, chronic diseases, multitargeted drugs

INTRODUCTION

Polypharmacy refers to the concurrent use of numerous drugs by one individual. (Monégat et al., 2014) The World Health Organization (WHO) defines polypharmacy as "the administration of many medications simultaneously or an excessive number of pharmaceuticals." While there is no consensus on the pharmaceutical threshold and assessment methods, polypharmacy is typically described as the concurrent use of five or more medications. Observational studies have demonstrated that polypharmacy can also result in an increase in adverse effects, functional and cognitive decline, and frailty (Maher et al., 2014). Polypharmacy is related with a higher risk of mortality, falls, medication interactions, non-adherence, and hospitalization, particularly among older persons with many chronic conditions (Davies et al., 2020). Moreover, many of these outcomes may also increase the incidence of prescriptions, thus the link should be viewed as bidirectional. In individuals taking several drugs, the incidence of adverse drug reactions (ADR) is much greater. Patients may require more medicine than expected to treat or decrease these undesirable effects (Dagli and Sharma, 2014). Polypharmacy has become a significant burden on health care. It has a projected yearly cost of $50 billion US dollars, which is rising over time. Identification of patients who are at high risk of obtaining incorrect polypharmacy is a crucial first step towards avoiding such expenses and maybe preventing adverse outcomes linked with polypharmacy (Moriarty et al., 2015). Consequently, the yearly direct cost of healthcare in the United States is projected to climb from US$104 billion in 2006 to about US$173 billion by 2020, accompanied by an increase in healthcare resource consumption (Mariotto et al., 2011).

Psychotropic Polypharmacy

Psychotic disorders are serious mental diseases that induce aberrant thoughts and perceptions. People with psychoses lose contact with reality. Two of the most prominent symptoms of schizophrenia are delusions and hallucinations (Shibayama et al., 2011). Patients with psychotic diseases also display tremendous personality changes, extreme mood swings, inappropriate emotional responses and loss of orientation of time, location and people around them. Chronic diseases such as diabetes, cancer, and hypertension are the world's leading causes of death. Psychotropic drugs are commonly used to treat these chronic condition symptoms. The discipline of clinical psychiatry is a difficult one, and clinicians have been studying ways to handle complex problems. Some of these illnesses present with life- threatening problems, while others present with patients being unresponsive and resistant to therapy.

Polypharmacy is a technique that physicians have utilised in challenging conditions for a long time; nonetheless, its efficacy has recently come under investigation. Mental polypharmacy is typically defined as the use of two or more psychiatric drugs in the same patient or the use of two or more medications (of the same chemical class or pharmacologic activities) to treat the same disease (Kingsbury et al., 2001). As a result, psychotropic drugs have become an essential component of a multidisciplinary approach to the treatment of mental health problems associated with chronic diseases. Psychiatrists, oncologists, and general care physicians frequently prescribe these drugs for both psychiatric and non-psychiatric symptoms, especially around the time of diagnosis (NG et al., 2013). Because psychiatrists tend to treat the most severely sick mental health patients and have the most comprehensive knowledge and expertise prescription psychotropic drugs, the analyses and works to date are confined to visits to psychiatrists (Mojtabai et al., 2008). The proportion of patients in these prior trials who were getting persistent, long-term psychotropic polypharmacy vs short-term, acute psychotropic polypharmacy is unclear (Duffey et al., 2005). (Duffey et al., 2005). In this article, we examine the prevalence of polypharmacy as reported by several studies. Finally, we provide a brief summary of the data on the association between polypharmacy and health outcomes in older individuals, with an emphasis on frailty, hospitalisation, and death.

Prevalence of Antipsychotic Polypharmacy (APP)

Recent studies have revealed the frequency of APP in the following nations: Nigeria, 70.4%, This research indicated that 70.4% of outpatients with schizophrenia have APP (Igbinomwanhia et al., 2017). Multiple antipsychotics at release were related with younger age, a diagnosis of schizophrenia or schizoaffective disorder, the prescription of a mood stabiliser, a shorter period of stay, and discharge to a residential treatment facility or crisis recovery unit. Readmission rates of the single (13.7%) and multiple (15.9%) antipsychotic groups were compared (Boskailo et al., 2017). The frequency of APP was 28.4% among our sample group of 577 individuals. Age > 29, male sex, schizophrenia diagnosis, comorbid intellectual impairment, comorbid drug use, increased number of hospital admissions, and high-dose prescription were among the demographic and clinical factors substantially linked with APP. In APP combinations, antipsychotics of the first generation and long-acting injectable formulations predominated. The co-prescribing of anticholinergics and sodium valproate was significantly associated with APP (Armstrong and Temmingh, 2017).

Almost all people on antipsychotic polypharmacy in the present research (99.1%) were taking two antipsychotics, with 82.7% taking a combination of typical antipsychotics (Tesfaye et al., 2016). The research groups included 11,961 patients from China and 25,034 patients from the Japan Medical Data Centre 14 days later. The majority of patients were taken oral antipsychotics of the second generation as monotherapy. Antipsychotic polypharmacy prevalence was 12.7% in China and 19.9% in Japan. Two antipsychotics orally were the most prevalent combination. More than two medicine combinations were recommended to just 5.3% of patients in Japan, compared to 0.3% in China. During follow-up, 12.6/100 person-years (11.8%) of patients in China and 9.6/100 person-years (11.0%) of patients in Japan moved from monotherapy to antipsychotic polypharmacy. In every research cohort, younger patients were more likely than older patients to transition to antipsychotic polypharmacy (Qiu et al., 2018).

Examined were the prescription forms of 3,744 individuals. Vietnam had the greatest rate of polypharmacy (59.1%) among these Asian nations, whereas Myanmar had the lowest percentage (22%) In addition, the combined use of other medications, expressed as highest and lowest rates, was as follows: mood stabilizers, China (35%) and Bangladesh (1%); antidepressants, South Korea (36%); anxiolytics, Pakistan (55%) and Myanmar (8%); hypnotics, Japan (61%); and anti-parkinsons agents, Bangladesh (88%) and Vietnam (10%). (Yang et al., 2018).

Spike in Psychotropic Polypharmacy

Current psychotic disorder treatment recommendations recommend limiting the use of numerous concurrent antipsychotics to the most extraordinary and treatment-resistant patients (Pringsheim et al., 2017). Several clinical and chemotherapy factors, including as disease severity, total antipsychotic dosage, and treatment with a depot antipsychotic, were also shown to be associated with antipsychotic polypharmacy (Correll et al., 2007). Yang et al. (2018) examined the prevalence of antipsychotic polypharmacy in 15 Asian nations and found that the average prevalence rate was 42.2%. Recent research in the United States revealed a prevalence rate of 27.2%. (Boskailo et al., 2017). From 1996–1997 to 2005–2006, the percentage of mental illness patient office visits including the prescription of two or more psychotropics rose from 42.6% to 59.0%. (Mojtabai and Olfson, 2010). In addition, almost 30% of these consultations involved the simultaneous prescription of three or more psychiatric medicines. From the 1970s to the 1990s, among hospitalised psychiatric patients, psychotropic monotherapy fell by about 30% in favour of psychotropic polypharmacy (Rittmannsberger, 2002). In a survey of patients with treatment-resistant mood disorders released from the Biological Psychiatry Branch of the US National Institute of Mental Health, the proportion using three or more drugs jumped from 3.3% in 1974-1979 to 43.8% in 1990-1995. (Frye et al., 2000). From the 1980s to the 2000s, Gallego and colleagues reported a 34% rise in the frequency of antipsychotic polypharmacy in North America (Gallego et al., 2012).

Polypharmacy involving classes of antipsychotics

Duffy et al (2005) observed a 53% incidence of concurrent usage of two or more psychotropic medicines for the treatment of a mental condition among minors. (Duffy et al., 2005). Patients with concurrent depression and suicide thoughts are three times more likely to get second-generation antipsychotics compared to fluoxetine, according to a prior study (Soria Saucedo et al., 2016). The warning may have prompted practitioners to treat teenagers with suicidal inclinations with alternatives, such as antipsychotics. In addition, the medical sector has made substantial investments in direct-to-consumer (DTC) marketing of polypharmacy, which has contributed to the growing trend of psychotropic usage. From 1996 to 2005, spending on marketing tripled for psychotropic medications, including a 500% rise in DTC advertising (Donohue et al., 2007). (Donohue et al., 2007).

Clozapine and risperidone were the most commonly given antipsychotic combination, followed by clozapine and zuclopenthixol, clozapine and aripiprazole, and olanzapine and paliperidone. There is a scarcity of information available to aid doctors in picking antipsychotic combinations that may properly be employed in complex clinical scenarios. Some clinical recommendations advise that, in reaction to a failed clozapine trial, a second antipsychotic can be introduced to clozapine (Boskailo et al., 2017). (Boskailo et al., 2017).

The combination of fluoxetine and olanzapine for the treatment of bipolar depression was one of the first psychotropic medications to earn FDA clearance for the treatment of a mood disorder (Thase, 2005). Both fluoxetine and fluvoxamine dramatically elevate the blood concentration of clozapine when administered concurrently (Spina et al., 2002). Another widespread practise is the off-label prescribing of supplementary atypical antipsychotic medicines as sedatives (Hartung et al., 2008). (Hartung et al., 2008). In comparison to clozapine monotherapy, Honer et al. (2006) showed no improvement in mental symptoms when clozapine was combined with risperidone. Smith, Gee, and Nielsen discovered a slight reduction in the intensity of psychiatric symptoms with antipsychotic combos including clozapine (Taylor et al., 2011). Therefore, there may have been an increasing usage of antipsychotic polypharmacy to handle complicated mental symptoms. Antipsychotics are frequently employed not just to treat the symptoms of a psychotic disorder, but also to decrease aggressiveness (Frogley et al., 2012).

Polypharmacy involving Antipsychotics and other drugs

In some therapeutic conditions, it is acceptable and supported by empirical data to utilise several psychotropic medications. Antipsychotics used to antidepressants for the treatment of major depressive disorder with psychotic characteristics (Wijkstra et al., 2015). Patients with treatment-resistant illness may require dual therapy, and depression, anxiety, pain, and psychosis may coexist in many patients, necessitating the use of numerous psychoactive medicines or mood stabilisers for the treatment of acute mania (Hirschfeld et al., 2002). This analysis is comparable to that of previous research that found no significant connection between illness type and antidepressant usage (Janberidze et al.,2014). Notably, our definition of CNS stimulant polypharmacy does not

take into consideration the concurrent use of long- and short-acting stimulants, which is regarded suitable for the treatment of ADHD. Thus, prevalence estimates of psychotropic polypharmacy reported only combinations of distinct CNS stimulants, which are normally prohibited by clinical recommendations. For example, physicians oppose concurrent usage of methylphenidate and amphetamine for medicinal purposes (Fullerton et al., 2012). In contrast, there may be therapeutic justification for the short-term use of benzodiazepines alongside antidepressants to treat serious depression (Gelenberg et al., 2010). Polypharmacy prevalence for CNS stimulants of the same class and alpha-agonists of the same class increased steadily from 2005–2006 to 2010. (Soria Saucedo et al., 2018). Alternatively, certain combinations may be useful in very certain circumstances. For example, clonidine and guanfacine are FDA-approved as augmentative therapy to CNS stimulant medicine (Southammakosane et al., 2015). (Southammakosane et al., 2015). A retrospective cohort analysis of Medicare patients in the community indicated that prostate cancer patients were least likely to get psychiatric drugs as polypharmacy drugs (Zuckerman et al., 2014).

Effects of Psychotropic Polypharmacy

Correll et al. (2007) discovered an association between antipsychotic polypharmacy and a large rise in lipids and a greater incidence of metabolic syndrome. The polypharmacy group had a 50% increase in lipid levels, whereas the monotherapy group had a 34.3% increase. Certain antipsychotic combos, including ziprasidone and clozapine and sertindole and clozapine, have been associated with an increase in the corrected QT interval (QTc), which raises the risk of ventricular tachycardia and sudden cardiac death (Takeuchi et al., 2015). The effects of antipsychotic polypharmacy on neurocognitive performance have been more variable. Several studies have demonstrated a correlation between antipsychotic polypharmacy and diminished neurocognitive function (Élie et al., 2009). In contrast, a meta-analysis by Nielsen et al. (2015) found no significant difference in cognition between individuals on clozapine monotherapy and those taking clozapine in combination with a second antipsychotic. Certain antidepressants block cytochrome P450 enzymes, hence affecting the metabolism of other psychotropic drugs, including other antidepressants. Fluoxetine, sertraline, and paroxetine are powerful inhibitors of cytochrome P450 2D6 and may cause significant increases in desipramine and nortriptyline concentrations (Nemeroff et al., 1996). Hori et al. (2013) examined changes in cognitive and social functioning of patients moved to an antipsychotic monotherapy regimen and discovered substantial gains in attention and occupational abilities compared to a group kept on a polypharmacy regimen.

CONCLUSION

These results highlight the importance of evidence-based psychotropic prescribing and close monitoring for potential adverse psychotropic drug–drug interactions in cancer patients, and imply that patients with chronic diseases and mental health disorders, even when treated, require a higher level of healthcare services. Further study is required to assess the proportion of increased healthcare resource usage in this population that is attributed to underlying mental health co-morbidities, psychotropic drug side effects, interactions, or other possible unfavorable therapeutic outcomes. Even while antipsychotic polypharmacy became the most prevalent same-class psychotropic polypharmacy at the conclusion of the research period, CNS stimulants and alpha agonists saw the greatest temporal rise. Significant heterogeneity in psychotropic polypharmacy among states highlights the need for additional study on the factors of psychotropic polypharmacy, as well as the safety and efficacy of such combinations, in order to improve the efficacy of evidence-based treatment.

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