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RESEARCH ARTICLE

DRUG UTILIZATION PATTERN OF ANTI DEPRESSANTS- A PROSPECTIVE CROSS SECTIONAL STUDY IN PSYCHIATRY OUTPATIENTS FROM A TERTIARY CARE HOSPITAL

[1,*]Dr. Syed Sajad Hussain, [2]Dr. Samina Farhat, [3]Dr. Yasir Hassan Rather and [4]Dr. Rehana Tabassum

[1]Senior Resident, Department of Pharmacology, Government Medical Collage, Srinagar
[2]Associate Professor and Head, Government Medical Collage, Srinagar Department of pharmacology
[3]Assistant Professor, Institute of Mental Health and Neuro Sciences, Government Medical Collage, Srinagar
[4]Assistant Professor, Department of pharmacology, Government Medical Collage, Srinagar

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ABSTRACT

Background: Depression is a major public health problem as it can cause significant clinical distress. Major depression disorder (MDD) has been found to cause impairment of social, occupational or other areas of function. Antidepressant drugs being leading psycho tropics that are prescribed worldwide, their utilization in actual clinical practice, effectiveness and safety in real life situation need continuous study.

Objective: Present study was carried out to evaluate the prescribing patterns of different antidepressants in psychiatry unit of a tertiary care hospital.

Methods: This prospective, observational and cross sectional study was conducted in the out-patient department (OPD) of General Psychiatry Unit of Sheri Maharaja Hari Singh (SMHS) hospital. A total of 600 cases were enrolled for the present study to investigate the prescribing pattern of antidepressants using a predesigned format out of which 543 subjects were taken for final results.

Results: Depression was found to be the leading cause of psychiatric morbidity among the subjects accounting for 36% of the total study population. Females suffered from depression more than their male counterparts. The most common age group suffering from MDD was found to between 20-39 years comprising almost 50% of study population. Monotherapy was practiced more frequently than polytherapy with 2or more drugs. Selective Serotonin Reuptake Inhibitors (SSRIs) like escitalopram was found out to be the most preferred antidepressant chosen by the treating psychiatrists.

Conclusion: Depression being the most common psychiatric disorder and this part of world is no exception to this. Among many other antidepressant groups, selective serotonin reuptake inhibitors are preferred over others because of their better side effect profile.

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INTRODUCTION

Drug utilization studies are carried out to assess appropriateness of pharmacotherapy which has important implications for clinical practice as they provide a clear picture of real world utilization pattern of drugs and help us to identify the areas that need change and improvement (http://www.who.int/medicines/areas/quality_safety.(Last cited on 2016 Mar 05)). Irrational prescribing and polypharmacy is very common in psychiatric practice (Covell *et al*.).

****Corresponding author: Dr. Syed Sajad Hussain,***
Senior Resident, Department of pharmacology, Government Medical Collage, Srinagar.

The principle target of the drug utilization studies/research is to promote the rational prescribing of the drugs. Without proper knowledge of drug prescribing pattern, it is impossible to suggest measures to improve the prescribing attitude of prescribers (Schizophr Bull, 2002). Major depressive disorder is reported to be the most common ailment among all psychiatric disorders (Akiskal, 2005). Worldwide depression is a major cause of disability and premature death. Antidepressant prescribing patterns have changed globally over the last few years, with conventional drugs like Tricyclic Antidepressants (TCAs) being replaced by Selective Serotonin Reuptake Inhibitors (SSRI's) and novel antidepressants (Pincus *et al*., 1998).

The rapidly expanding field of psychopharmacology is challenging the traditional concepts of psychiatric treatment and research, and is constantly seeking new and improved drugs to treat psychiatric disorders. In this way, psychiatrists are continuously exposed to newly introduced drugs that are claimed to be safe and more efficacious (Costa *et al*., 2001). Many studies have pointed to significant changes in the drug utilization pattern of antidepressants (Olfson *et al*., 2002). The outpatient and medication based therapy for depression is becoming much more popular for the treatment of depression than for psychotherapy (Ray and Chogtu, 2011). Thus, it is important to know the current trend of drug usage and the effectiveness of the drugs which are used for depression. Drug utilization studies are pointers to prescribing behaviour of clinicians and help in improving it. To our knowledge no study has been carried out to see the drug utilization pattern of antidepressants in this part of the world. The objective of this study was to evaluate the prescribing pattern of antidepressants among patients who approach the OPD of psychiatry unit of a tertiary care hospital.

STUDY METHADOLOGY

A prospective, observational and cross sectional clinical study was carried out in the General Psychiatric OPD of Sheri Maharaja Hari Singh (SMHS) hospital for a period of six months during June 2015 till November 2015. Some 600 patients were enrolled for the study, out of which 543 subjects were taken for final statistical analysis. Patient's identities were held in strict confidence and all measures were taken to protect the confidentiality of the patients. Patients or their relatives were explained the aim and procedures of study and a written informed consent was obtained. The data was collected in a proforma which included the demographic details, clinical history, past history, clinical diagnosis and treatment prescribed. Antidepressant medications received by the subjects in our hospital set up were ascertained by noting down the type of disease, drug doses and frequency of the drugs, strength of antidepressant, the duration of the treatment, etc. in the prescribed proforma.

Inclusion Criteria

- All patients who attend the psychiatry out patients clinic of the hospital.
- Patients from all age groups & both the sexes were included.
- Understood the purpose of study and were ready to provide information regarding their health status and signed an informed consent document.
- Exclusion Criteria
- Patients suffering from malignancies and terminally ill patients.
- Were judged clinically to be at suicidal risk (too serious to be included in the study).
- Had a history of allergic or serious adverse reactions to study the medications.
- Had history of substance abuse.

All analyses were done in an intent-to-treat basis, meaning that all patients were included in the treatment groups no matter how long they adhered to the protocol. A descriptive statistical analysis was performed using recent SPSS version.

RESULTS

Out of the total 543 patients who analysed, majority of them (49.7%) were found to be of middle age group (20-39 years), followed by age group of 40-59 years, which comprised 29.2% of total participants. The average age of the patients was found to be 35.53 years. When the subjects were evaluated in terms of their sex distribution, the females outnumbered the males, and the female percentage was found to be 58.56% of the total subjects (**Table 1).**

According to the result of the study, Major depression was found to be leading cause of psychiatric morbidity forming 35.9% of the total patients evaluated. This was followed by bipolar mood disorder, General anxiety disorder and Obsessive compulsion disorder, comprising 9.9%, 8.8% and 6% of the total study population respectively. Females (117) and males (87) presenting with depression in this study suggests that, occurrence of depression is more in females with male: female ratio of 1: 1.5 (**Table 2).** In our study, it was observed that monotherapy with different group of antidepressants was practiced in 168 patients i.e. 86% of the study population while polytherapy with 2 drugs of different group was practiced only in 27 patients i.e. 14%. Among 168 cases who received monotherapy, 80 (41%) received escitalopram, 37(18.9%) subjects received mirtazapine, 15 (7.6%) subjects got sertraline, whereas 12 (6.1%) received venalfexine. Nortriptyline was prescribed to 10 (5.1%) patients whereas paroxtine and fluoxetine was received by 4 (2%) patients each. Among various other antidepressants that were prescribed as monotherapy included doxpine, bupropion and imipramine, which were given to 2 (1%) patients each. Similarly out of 27 cases receiving polytherapy with 2 drugs, 14 (7.5%) subjects were put on combination of venalfexine and bupropion, 7 subjects (3.1%) were received combination of sertaline and nortriptyline, whereas 6 (3%) patients were on escitalopram and bupropion combination (**Table3).**

DISCUSSION

The burden of illness resulting from psychiatric and behavioural disorders is enormous, although it remains grossly under represented by conventional public health statistics. Psychotropics are among the most commonly used drugs, therefore the aim of treating psychiatrist should be to keep the number of drugs per prescription as low as possible since polypharmacy leads to increased risk of drug interactions, increased hospital cost and errors of prescribing (Atanasova and Terziivanov, 1995; Pradhan *et al*., 1990). Several important findings were revealed by this study, Depression was found to be the most common psychiatric morbidity in our study population comprising almost 36% of total patients evaluated. This finding correlates with study results by Ahmed Tabish *et al*, who carried out a drug utilization study in Chhattisgarh and reported MDD to be the most common psychiatric morbidity and was diagnosed in 30.6% of the study population (Tabish *et al*., 2015). In this study the (Male: Female) ratio was 1:1.5 correlating with the fact that prevalence of major depression is higher in females compared to males which is in accordance with finding stated in community based epidemiological study released by National Institute of Mental Health (2007) (Oye *et al*., 2006).

Table 1. Prevalence of various psychiatric disorders among the study population

Diagnosis	Male	Female	Total (%)
Major Depression	78	117	195 (35.9%)
Bipolar Mood disorder	12	42	54 (9.9%)
Major Anxiety disorder	21	27	48 (8.8)
Obsessive Compulsive disorder	18	15	33 (6%)
Schizophrenia	12	15	27 (4.9%)
Conversion disorder	3	18	21 (3.8%)
Panic attack	3	15	18 (3.3%)
Somatoform disorder	9	9	18 (3.3%)
Seizure disorder	9	6	15 (2.7%)
Others	60	54	114 (20.9%)
Total	225 (41.43%)	318 (58.56%)	543 (100%)

Table 2. Age and gender wise distribution of the study population

Age(in Years)	Male	Female	Total (n=543)
<19	18	45	63 (11.6%)
20-39	117	153	270 (49.7%)
40-59	75	84	159 (29.2%)
60-79	15	36	51 (9.3%)
Total	225 (41.43%)	318 (58.56%)	543 (100%)

Table 3. The different antidepressant drugs used during the study period

Name of the Drugs	N (% age)
SSRI (Escitalopram)	8o (41)
Atypical antidepressant (Mirtazapine)	37 (18.9)
SSRI (Sertaline)	15 (7.6)
SNRI+Atypical antidepressants	14 (7.1)
SNRI (Venalfaxine)	12 (6.1)
TCA (Nortriptyline)	10 (5.1)
SSRI+TCA Antidepressants	7 (3.5)
SSRI + Atypical antidepressants	6 (3)
SSRI (Paroxtine)	4 (2)
SSRI (Fluoxetine)	4 (2)
TCA (Doxepine)	2 (1)
Atypical antidepressant (Bupropoin)	2 (1)
Tricyclic antidepressant (imipramine)	2 (1)
Total	195 (100)

The most common age group to whom antidepressant were prescribed was the age group of 20-39 years forming almost 50% of the total study population. Increasing use of antidepressant drugs in this age group may be due to increased incidence of mental ill health in this age group particularly depression, improved mental health literacy in general population, reduction in stigma associated with mental illness and increase in drug treatment option (Jorm *et al*., 2006). Adolescent and geriatric groups together constituted only about 20% of our patient population. This indicates probable lack of awareness of psychiatric disorders of children in parents, the unusual presentation of psychiatric disorders in this age group which leads to delayed diagnosis in this age group and neglect of mental health of elderly in lower socioeconomic class. Similar results have been reported by Raut P who carried out a prevalence study on South Indian population (Raut, 2006).

Prior to the introduction of first SSRI in 1987, medical treatment of depression was limited primarily to tricyclic antidepressants (TCAs) and non-selective mono-amine oxidase inhibitors (MAOIs) (Dan *et al*.). But recently SSRIs have gained popularity for treatment of depression compared to TCAs (Ward, 1997). Several studies conducted on Indian population have revealed similar facts.

An Indian study from Pondicherry, reported that newer antidepressants – duloxetine, escitalopram, sertraline and mirtazapine accounted for the bulk of prescriptions (96.36%) and duloxetine (50%) being most prescribed drug which belongs to selective serotonin-nor epinephrine reuptake inhibitor group (Lahon *et al*., 2011). Another Indian study reported that prescribing frequency of SSRI was more than the TCAs and atypical agents (Piparva *et al*., 2011). A large retrospective study in UK reported that SSRIs were the leading antidepressants (66%) being prescribed children and adolescents followed by TCAs (31%) and other antidepressants (3%) (Wijlaars *et al*., 2012). Currently, SSRIs are greatly preferred over the other classes of antidepressants. The adverse-effect profile of SSRIs is less prominent than that of some other agents, which promotes better compliance. The SSRIs are thought to be relatively safe in patients with cardiac disease except citalopram in high doses (Potter *et al*., 2007; http://www.fda.gov/Drugs/DrugSafety/ucm297391.html. (Last accessed 2016 Mar 03)). Similar results were revealed by the present study with SSRIs comprising 52.6% of the total antidepressants prescribed to our patients and estilopram emerged as the single leading drug of this category forming 41% of all the antidepressants prescribed to our patients.

Among the other antidepressants that were prescribed to our study population, atypical antidepressant, mitrazapine was prescribed to almost 19% of the patients followed by Venlafexine (which belongs to SNRI) which was taken by 6% of our patients. Tricycle antidepressants were the least common drugs prescribed to only 7% of our subjects and nortriptyline was the leading drug of this category. This is in accordance to the current recommendations of American Psychiatric Association (APA) and National Institute of Clinical Excellence (NICE) guidelines - 2010, in the management of mood disorders (http://www.psychiatryonline.com/ pracGuide/pracGuideChapToc_7.aspx.(Llast accessed 2016 Mar 05); http://guidance.nice.org.uk/CG90.(Last accessed 2016 Mar05)). In our study population, majority of the patients (84%) were prescribed a single antidepressant drug and polypharmacy comprising of two antidepressant drugs from two different groups was given to only 16% of total participants. So what can be concluded is that polypharmacy was avoided to a large extent in the present study, and it has been found that polypharmacy can lead to poor compliance, drug interactions, adverse drug reactions, under-use of effective treatments and medication errors (http://guidance.nice.org.uk/CG90. (Last accessed 2016 Mar05); http://www.ncbi.nlm.nih.gov/pmc/articles/PMC 2546 482. (Last accessed 2016 Mar03)). This is worth to mention that in majority of studies which have been carried out to observe the utilization pattern of antidepressants, polypharmacy have been reported quit frequently, and this trend is consistent even after prescription monitoring (Paton, 2003; Chong *et al*., 2004; Freudenreich, 2002). In the present study 7% of our patients received the combination of SNRIs and atypical antidepressants, 3.5% received SSRIs and TCAs, while as 3% patients were prescribed the combination of SSRIs and atypical antidepressants. Almost similar findings were reported by Mishra *et al*, in his study on Indian population, where SSRI plus NDRI & SSRI plus TCA were used in 17 (10.62%) & 7 (4.37%) patients respectively (Mishra and Swain, 2012).

Conclusion

Major depressive disorder is a serious public health problem was found to be the most common indication for prescribing antidepressants. Females suffer from depression more than their male counterparts, but majority of patients were found to be in the age group of 20-39 in both the sexes. Prescription practices in Government Medical College, Srinagar showed high rate of monopharmacy than polytherapy and conventional drugs like SSRIs are more preferred than newer antidepressants in our institution. Escitalopram, a newer drug belonging to SSRI, is the most frequently prescribed antidepressant whereas mirtazapine is the preferred drug from newer antidepressant class. Given the paucity of empirical data available to guide psychiatrists in the psychopharmacological treatment of depression further studies are needed to be carried out in this direction.

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