

## DRUG PRESCRIBING PATTERN FOR MAJOR DEPRESSIVE PSYCHOSIS PATIENTS IN GERIATRIC CLINIC OF A TEACHING HOSPITAL IN NORTHERN INDIA

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### ABSTRACT

**Objectives:** The aim of the study was to evaluate the current prescribing pattern of Psychotropic drugs in geriatric patients of MDP in a teaching hospital in Northern India.

**Methods:** Records of geriatric patients who attended the Psychiatric outpatient department of JNMCH, AMU, Aligarh from January 2008 to January 2012 were reviewed. Data were tabulated and analyzed for demographic characteristics and to discern prescribing frequencies and pattern.

**Result:** During this period 360 patients were enrolled in the clinic of which 156 suffered from Major Depressive Psychosis (MDP). Of these 156 patients, 56% were male and 44 % were female. 79% of the patients belonged to urban area and 21% were from rural background. About 85.89% were prescribed SSRIs either alone or in combination with Benzodiazepines or Atypical antipsychotics. Others received TCAs (10.25%) and A typical antidepressants (3.84%).

**Conclusion:** This study shows that SSRIs were the most commonly prescribed drugs for patients of MDP in this age group.

### INTRODUCTION

Depression is recognized as a serious public health problem throughout the world. Depressive disorders often impair social and occupational function and cause a considerable social burden. The Global Burden of Disease study showed that depression will be the second leading cause of Disability Adjusted Life Years by 2020 in the world [1]. Depression increases incidence of disability independent of sociodemographic factors, physical health status, cognitive functioning and vision-related limitations [2]. Lifetime prevalence of major depressive disorder was found to be 16.2% in US [3]. Depression in older persons is closely associated with dependency and disability and causes great suffering for the individual and the family. The rate is higher in persons suffering from other chronic diseases like Parkinson's disease, Heart disease, and Cancer that interfere with various functional abilities of the patients. Depression is also common in elderly people who require home healthcare or hospitalization. Elderly persons are also prone to meet stressful life changes such as loss of spouse. Suicide is one of the leading causes of death in geriatric population suffering from depression. Males account for the majority of these suicides, with divorced or widowed men at highest risk [4]. Depression is also common in developing world. The prevalence of depressive disorders among the elderly of 60 years and above population in India was found to be about 21.7% [5]. In developing countries the prevalence of depression was found to be significantly higher in elderly males who were single, divorced, widowed or separated and majority of the patients were unemployed or retired. The elderly living in a nuclear family system were more likely to suffer from depression than those living in a joint family system. Elderly with low level of education and chronic somatic illness were found more susceptible to depression [6]. Pharmacotherapeutic approaches for the management of Major Depressive Psychosis (MDP) include psychotropic drugs, but these agents are limited by their side-effect profile, the need for dietary precautions, and drug interactions. The use of antidepressants in the elderly patients is challenging as number of patients may be receiving psychotropic drugs which have their own side effects which can limit their utility in treatment of depression. But rational drug prescription avoids many potential adverse risks, negative consequences and complications which arise from inappropriate prescription of drugs [7,8] Regular use of antidepressants drugs causes cognitive impairment, working memory dysfunction, weight gain, sexual dysfunction, sleep disturbances, fatigue and apathy [9].

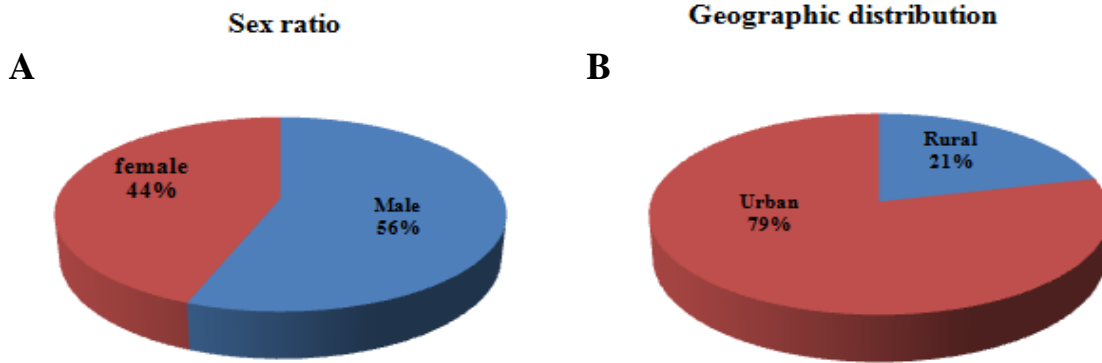
Many studies have found that most depressed patients receive polypharmacy. Although numerous treatment guidelines have been published in the hope of solving these problems, changing the prescribing patterns of clinicians remains challenging. Geriatric population have associated comorbid conditions for which they are prescribed various other medications, making them prone to dangerous drug-drug interactions. The risk of suicide is always a concern in depression and this risk is not necessarily reduced by the use of antidepressants. But some patients may have an increase in suicidal thoughts with antidepressant treatment [10]. Geriatric population forms a special target group because of differing psychological pressures & declining physiological functions which might affect the mental status of the patient. Hence the present study was designed to evaluate the current prescribing pattern of Psychotropic drugs in Geriatric patients of MDP in a teaching hospital of Northern India.

### MATERIAL AND METHODS

All clinical records of patients aged 60 years & above who attended the Psychiatric outpatient department of JNMCH, AMU, Aligarh from January 2008- January 2012 were reviewed. Patients were diagnosed according to the ICD-10 criteria. The records of patients diagnosed with Major Depressive Psychosis were reviewed for information such as gender, age and data concerning psychotropic prescribing patterns such as type of medication, route of administration, dose and frequency. For purpose of the analysis, antidepressants were grouped as follows: SSRIs (citalopram/escitalopram, paroxetine, fluoxetine, sertraline); Atypical antidepressants (mirtazapine, venlafaxine, bupropion); other antidepressants including TCAs (imipramine, amitriptyline, nortriptyline, dothiepine, trazodone). Antipsychotics were grouped into typical (Haloperidol, Chlorpromazine) and Atypical antipsychotics (Olanzapine, Aripiprazole). Data were entered into Excel spreadsheets and analyzed for demographic characteristics and to discern prescribing frequencies and patterns.

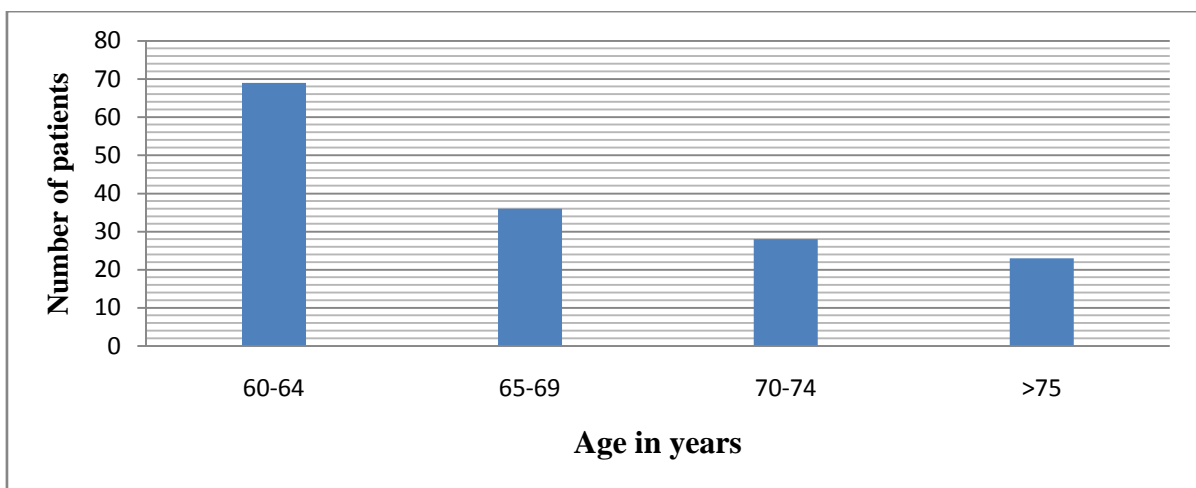
### RESULTS

During the period (January 2008- January 2012) 360 patients were enrolled in the clinic of which 156 suffered from Major Depressive Psychosis (MDP). 87 (56%) were male and 69 (44%) were females. (Fig.1 A) 123 (79%) of the patients belonged to urban area and 33 (21%) were from rural background (Fig. 1 B).



**Fig. 1: Prevalence of depression according to (A) Gender (B) Geographic distribution**

Out of 156 patients of MDP 69 (44%) patients were of 60-64 years of age, 36 (23%) patients were of 65-69 years, 28 (18%) patients were of 70-74 years while 23 (15%) belonged to more than 75 years of age (Fig. 2)

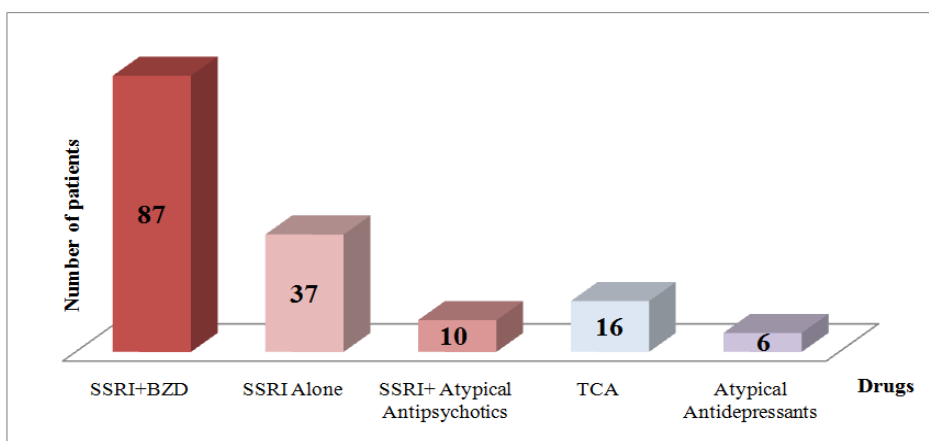


**Fig. 2: Prevalence of depressive disorders in geriatric population**

Out of these patients, 134 (85.89%) were prescribed SSRIs, Fluoxetine was the most common SSRI prescribed to 98 patients (62.82%) followed by Sertraline to 24 patients (15.38%), Escitalopram to 12 patients (7.69%). 87 of these patients (64.92%) were prescribed Benzodiazepines in combination with a SSRI. Among Benzodiazepines, Clonazepam was prescribed to 76 patients (56.71%) and 11 patients (8.20%) received Alprazolam. 37 (27.61%) patients were prescribed SSRIs as monotherapy. Among atypical antipsychotics, Olanzapine and Aripiprazole were prescribed to 10 patients (7.46%) in combination with a SSRI.

TCAs were prescribed to 16 patients (10.25%). Among TCAs, dothiepin was prescribed to 12 patients (7.69%) and Amitriptyline to 4 patients (2.56%). Mirtazepine and Venlafaxine were the atypical antidepressants prescribed to 6 patients (3.84%) in the outpatient clinic. (Fig. 3)

Antidepressants drugs from various groups were prescribed to patients in outpatient clinic. Their doses, route of administration and frequency were also reviewed, shown in table 1.



**Fig. 3: Percentage of patients receiving drugs from different groups of antidepressants.**

Table 1: Dose, route and frequency of the drugs prescribed in the outpatient clinic for depression

Drug	Dose	Route and frequency
<b>SSRI</b>		
Fluoxetine	20-40 mg	Oral , once daily
Sertraline	25-100 mg	Oral , once daily
Escitalopram	5-10 mg	Oral , once daily
<b>Benzodiazepines</b>		
Clonazepam	0.25- 1 mg	Oral , twice daily
Alprazolam	0.25- 0.5 mg	Oral , twice daily
<b>Tricyclic antidepressants</b>		
Amitriptyline	25-50 mg	Oral , once daily at bed time
Dothiepin	25-75 mg	Oral , once daily at bed time
<b>Atypical antidepressants</b>		
Mirtazepine	7.5-15 mg	Oral , once daily at bed time
Venlafaxine	75-150 mg	Oral , once daily
<b>Atypical antipsychotics</b>		
Olanzapine	5-20 mg	Oral , once daily
Aripiprazole	5-10 mg	Oral , once daily

## DISCUSSION

Our study shows that there is increased prevalence of depressive disorders in age group 60-64 years (44%) followed by 65-69 years (23%), 70-74 years (18%) and above 75 years (15%). But various studies reported conflicting data on the prevalence of depression in the elderly, which suggested that there is a reduction in this age group [11]. Probably sudden transition in life style from active to sedentary due to retirement from work may be one of the contributory factors for the maximum prevalence of depression in age group of 60-64 years. Depressive disorders are most commonly being observed in urban than in rural population. Our findings are consistent with these observations but we report higher percentage of occurrence of depressive disorders in males in geriatric group unlike some other reports [12,13].

Appropriate therapy reduces depressive symptoms and improves overall well-being. Since mild cognitive impairment, with poor concentration and psychomotor retardation, may result from either depression or dementia, a trial of antidepressant therapy should be initiated in patients with apparent dementia who meet diagnostic criteria for major depression. Other psychiatric disorders which frequently coexist with depression are mainly anxiety and psychosis for which treatment was given [14].

Majority of the patients were prescribed more than one drug, the most common combination was a SSRI and Benzodiazepine. The most commonly prescribed antidepressants among the SSRIs were Fluoxetine and Sertraline while Clonazepam was the most commonly prescribed Benzodiazepine. The combination provided advantage of reducing SSRI-induced anxiety or agitation that can occur early in the course of therapy, improved adherence to antidepressant therapy and better control of episodic or situational anxiety. In various studies it has been seen that patients who received the combination of an antidepressant and benzodiazepine for MDD were less likely to discontinue treatment and more likely to show improvement than those receiving antidepressant monotherapy [15]. Drug prescribing pattern in our study was found to be similar to that of most reports where more than one medication was included in the prescription [16].

The combination of antidepressants with antipsychotics was also prescribed for associated psychotic symptoms with depression. The common SSRIs used were Fluoxetine/Sertraline with atypical antipsychotics like olanzapine/aripiprazole. Other studies also suggested that SSRIs and atypical antipsychotics together are effective for treatment of psychotic features in depression [17].

Current practice guidelines recommend that physicians should choose an antidepressant drug based on past experience of treatment, side effects, patient preference and cost. Due to disease and aging physiology, renal elimination and liver metabolism of drugs may be impaired in many elderly patients. These alterations in pharmacokinetics in the elderly may contribute to change in volume of distribution, decrease in elimination and longer half life [18].

Drug-drug interactions are common in elderly due to polypharmacy, which is necessary in patients with multiple comorbidities. Comorbidities add to adverse drug reactions. A drug with even mild anticholinergic effect may cause acute urinary retention in elderly with benign prostatic hypertrophy or may precipitate dementia with mild Alzheimer's disease [19]. As non specific action of TCAs leads to a range of undesirable side effects these drugs should be used with caution in elderly after complete clinical assessment of other associated morbidities [20].

Over the past decade, there has been an increase in the number and types of antidepressants available. For many years, tricyclic antidepressants (TCAs) were the first-line drugs for depression. Recent studies shows that selective serotonin reuptake inhibitors (SSRIs) are now the initial choice of antidepressants and are more commonly prescribed antidepressant drugs [21]. The present study also found the same pattern of prescription. Because of low side effect profile, better compliance was obtained with these drugs. With regard to newer dual-action antidepressants, mirtazapine or venlafaxine is prescribed to few patients. Some studies have reported that treatment with serotonergic and noradrenergic antidepressant drugs was more likely to result in higher response and remission rate than the SSRIs [22].

Dothiepin was commonly prescribed Tricyclic antidepressant in patients suffering from chronic depression. Among Tricyclic antidepressants, dothiepin was reported as a safe drug for elderly & cardiac patients [23].

In the outpatient clinic oral preparations were prescribed and majority of the them were given once daily. The drugs from tricyclic antidepressants like amitriptyline were given at bed time. Some other studies showed that compliance was improved on a once-daily regimen. Probably the single most important action to improve compliance is to select medications that permit the lowest daily prescribed dose frequency [24].

## CONCLUSION

This study shows that SSRIs with benzodiazepines were the most commonly prescribed drugs for patients of MDD in geriatric age group. Antidepressants with antipsychotics were prescribed for psychotic depression. Newer drugs like Venlafaxine and mirtazepine were also prescribed to few patients. Majority of the drugs were given on once daily basis which was considered an important factor for improving compliance.

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