Pattern of psychotropic drug usage in psychiatric illnesses among elderly

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Abstract
This study evaluated the pattern of psychiatric illness and usage of psychotropic drugs in elderly patients attending the psychiatry out patient department of a tertiary care hospital. A retrospective cross-sectional study was conducted for a period of one year (June 2007 until May 2008) in the psychiatry out-patient department of a tertiary care hospital in Mangalore, Karnataka, India. The medical records of 78 elderly (age>60) patients attending psychiatric out patient department were reviewed. The demographic details, diagnosis, co-morbid illnesses and drugs prescribed were collected. Prescription of 78 patients were studied, out of which 39 (50%) were for males and 39 (50%) for females. The most common illness among these individuals was depression (29.5%) followed by psychosis (21.8%). The most commonly prescribed drugs were benzodiazepines (50 out of 78, 64%), antidepressants (39 out of 78, 50%) and antipsychotic agents (34 out of 78, 43.6%). Depression is the most common illness followed by psychosis in elderly. Sertraline and risperidone are the most commonly used antidepressant and antipsychotic drugs among elderly patients.

Keywords: antidepressant; antipsychotic agents; benzodiazepines; elderly

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Introduction

In India the aging population above 60 years has been estimated to almost double from 7.7% in 2001 to 12.30% by 2025. Psychotropic agents are frequently prescribed to the elderly for a wide variety of mental health conditions. There is an increase in spending on prescription drugs generally and psychotropic medications specifically due to rapid development of new products and the inclusion of newer psychotropic drugs in the usual treatment for mental illness. These agents not only improve patients' conditions but may also lead to deleterious outcomes, especially if not used carefully.

Elderly patients are more susceptible to these deleterious outcomes owing to pharmacokinetic and pharmacodynamic changes associated with advancing age. The rapidly expanding field of psychopharmacology is challenging the traditional concepts of psychiatric treatments, and research is constantly seeking new and improved drugs to treat psychiatric disorders. The commonest drug groups prescribed for mental health related disorders include antidepressants, antipsychotics, mood stabilizers, benzodiazepines and acetylcholinesterase inhibitors (AChEIs).

Clinical guidelines recommend early identification and treatment of mental disorders among older adults, and the more expensive novel agents are increasingly cited as first-line treatments. A drug utilization study is considered to be one of the most effective methods to assess and evaluate the prescribing of physicians. Drug utilization studies showing the trends of drug use in psychiatry, among elderly patients of this region are unavailable. Availability of such data would also help to compare the changes in pattern of psychotropic drug use over time or to compare the pattern of drug use between young individuals and elderly patients. This might have an impact on changes in policies in the general medical and mental health sectors. A similar study conducted by Moore et al. in which the patient population selected was 15 years and above showed antidepressant drugs were the class of psychotropic drugs most prescribed in patients who were attending psychiatric outpatient clinics in Trinidad. Another study conducted by Chien et al. studied changes in the use of psychotropic agents in Taiwan between 1997 and 2004. In this part of the country, no such studies are available especially in elderly psychiatry patients. More evidence is needed to better estimate the value and cost-effectiveness of the newer psychotropic drugs, particularly among older adults.

The objective of this study was to evaluate psychiatric illness and patterns of psychotropic drug prescribing and utilization among elderly in a tertiary care hospital in Dakshina Kannada district of South India.

Material and methods

This study comprised of reviewing the medical records of 78 elderly patients above 60 years retrospectively who attended the psychiatry outpatient care unit of two tertiary care hospitals from June 2007 until May 2008 without revealing the patients identity. This psychiatry unit in the two tertiary care center provides care to the patients from Dakshina Kannada district and few more neighboring districts in South India. The psychiatry consultants along with other well trained staff carry out long-term, continuous, treatment for the patients. Most of these elderly patients pay the hospital expenses by themselves, for a few of them health cost is borne by geriatric care center. Before starting the study, a written approval for the study protocol was obtained from the Institutional Ethics Committee. The information that was collected from the medical records of patients included demographic characteristics such as age,
gender and coexisting diseases, diagnosis
drug names, quantity prescribed. The cost
of the drugs prescribed in each
prescription was calculated using the price
list made available from the hospital
pharmacy. Psychiatric consultants in
these tertiary care hospitals used the
Diagnostic and Statistical Manual of
Mental Disorders, Fourth Edition (DSM-IV)
for diagnosis. Results were analyzed
using descriptive statistics.

Results
Seventy eight outpatient medical records
of elderly patients attending outpatient
care unit were reviewed, the average age
was 68 years; 39 (50%) were males and
39 (50%) females.

Total number of drugs prescribed in these
patients during the study period was 170.
In the present study the average number
of psychotropic drugs per prescription was
2.2. Patients were most frequently treated
for depressive disorder (29.5%),
schizophrenia and other psychotic
disorders (21.8%), bipolar affective
disorder (14.1%), dementia (10.3%),
somatoform disorders (9%) and substance
related disorders, anxiety disorders,
personality disorders and delusional
disorder (15.3%) (Figure 1).

Each patient could be prescribed more
than one psychotropic agent. In the
present study, benzodiazepines were
prescribed in 73.1% (57 out of 78) (Table
1).

Lorazepam was the benzodiazepine most
prescribed (27 out of 57). Antidepressants
were prescribed in 53.8% (42 out of 78) of
the elderly patients (Table 1), most
commonly prescribed antidepressant was
sertraline (14 out of 42) which is a
selective serotonin reuptake inhibitor
(SSRI). Antipsychotic agents were used in
43.6% (34 out of 78) of the elderly patients
(Table 1).

Risperidone was the most commonly
prescribed antipsychotic agent (18 out of
34). Mood stabilizing agents were used in
16.7% (13 out of 78), of the elderly
patients and the most commonly used
drug was divalproex (12 out of 13).
Anticholinesterase, donepezil was used in
9% (7 out of 78) of elderly patients.
Potentially inappropriate psychotropic
drugs recorded in the elderly in this study
were 3.5% (6 out of 170).

Eighty three percent (65 out of 78)
received polytherapy, and 16.7% received
monotherapy for psychiatric illness (Table
1).

Among the patients who received
polytherapy 55.1% (43 out of 65) received
two drug combinations, 23.1% (18 out of
65) received three drug combinations,
3.8% (3 out of 65) received four drug
combinations and 1.3% (1 out of 65)
received five drug combinations. Out of 55
patients aged between 60 to 70 years,
14.5% (8 out of 55) received one drug;
85.5% (47 out of 55) received polytherapy
(Table 1) i.e. 56.4%, 23.6%, 3.6% and
1.8% received two, three, four and five
drug combinations, respectively.

Twenty three patients were aged more
than 70 years of whom 21.7% (5 out of
23) received one drug; 78.3% (18 out of
23) received polytherapy (Table 1) i.e.
52.2%, 21.7% and 4.3% received two,
three and four drug combinations,
respectively. Only 1.8% (3 out of 170) of
the psychotropic drugs was prescribed by
generic name. Average drug cost per
prescription per day was 9.4 INR per day
(approximately 0.21 USD).
Figure 1. Distribution of patients according to the diagnosis

Table 1: Psychotropic drug use in elderly psychiatric patients

<table>
<thead>
<tr>
<th>Psychotropic drug use parameter</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total prescription reviewed</td>
<td>78</td>
</tr>
<tr>
<td>Total number of drugs prescribed</td>
<td>170</td>
</tr>
<tr>
<td>Benzodiazepines prescribed (n=78)</td>
<td>57 (73.1)</td>
</tr>
<tr>
<td>Antidepressants prescribed (n=78)</td>
<td>42 (53.8)</td>
</tr>
<tr>
<td>Antipsychotics prescribed (n=78)</td>
<td>34 (43.6)</td>
</tr>
<tr>
<td>Mood stabilizing agents prescribed (n=78)</td>
<td>13 (16.7)</td>
</tr>
<tr>
<td>Miscellaneous drugs prescribed (n=78)</td>
<td>24 (30.8)</td>
</tr>
<tr>
<td>Average number of psychotropic drugs per prescription (n=170)</td>
<td>2.2</td>
</tr>
<tr>
<td>Drugs prescribed by generic name (n=170)</td>
<td>3 (1.8)</td>
</tr>
<tr>
<td>Potentially inappropriate psychotropic drugs (n=170)</td>
<td>6 (3.6)</td>
</tr>
<tr>
<td>Average drug cost per prescription per day (n=170)</td>
<td>9.4 INR</td>
</tr>
<tr>
<td>Polytherapy (n=78)</td>
<td>65 (83.3)</td>
</tr>
<tr>
<td>Monotherapy (n=78)</td>
<td>13 (16.7)</td>
</tr>
<tr>
<td>Elderly of age 60-70 receiving polytherapy (n=55)</td>
<td>47 (85.5)</td>
</tr>
<tr>
<td>Elderly of age &gt;70 receiving polytherapy (n=23)</td>
<td>18 (78.3)</td>
</tr>
</tbody>
</table>

* Total drugs prescribed exceeds 100%, since the average patients received more than one drug
Discussion
Pharmacotherapy plays an important role in the management of psychiatric illnesses in the elderly, but it can be a challenge because age-related changes unfavorably affect many psychotropic drugs by altering drug pharmacokinetics and pharmacodynamics. Benzodiazepines, remain the most commonly prescribed group of mental health drugs, the findings of our study are also suggestive of this in elderly patients attending psychiatric outpatient care unit. Low lipid soluble benzodiazepines (lorazepam and oxazepam) have less risk for accumulation and toxicity, hence are the best choice in elderly. Lorazepam was the most commonly prescribed benzodiazepine in this study. Sertraline a SSRI was the commonly prescribed antidepressant in our study. The preferred approach to depression in the elderly is a SSRI, initiated in the elderly at one-third to one-half of the dosage used in the younger population. These agents have better side-effect profile, do not require as much dosage adjustment and appear to be as efficacious as tricyclic antidepressants (TCAs) in most types of depression. The availability and safety advantage over TCA’s in cardiovascular effects and overdose has increased the utilization of antidepressants in general and SSRI’s in particular. In spite of this, high-quality pharmacoeconomic analyses are needed to determine whether the magnitude of these advantages justify the significantly higher cost.

More recently introduced agents, called ‘atypical’ antipsychotics include clozapine, risperidone, olanzapine, ziprasidone and others; they have fewer neurological side effects and better relief of negative cognitive and affective syndromes. Our findings suggested risperidone was the most commonly used antipsychotic in elderly patients. Though the evidence regarding the safety and efficacy of the newer mental health drugs is encouraging, more evidence is needed to better estimate the value of these newer drugs, particularly among older adults. Although atypical antipsychotics may possess some advantages (such as a lower risk of extrapyramidal symptoms) over typical antipsychotics, recent evidence suggesting an increased risk of stroke and diabetes with atypical antipsychotics raises questions about the overall risks and benefits associated with these drugs especially in the elderly. Anticonvulsants are often used as an alternative to lithium among older patients with dementia or bipolar disorder, despite the absence of evidence from randomized, controlled trials in this population. This is true in our study too, where in divalproex was used in 92% of the patients.

In a previous study done, the average number of psychotropic drugs prescribed per prescription in adults was 2.8 contrasts to which in our study average number of drugs per prescription is lower. Inappropriate prescribing (IP) encompasses the use of medicines that pose more risk than benefit, particularly where safer alternatives exist. Potentially inappropriate psychotropic drug groups prescribed most often involve antidepressant agents and antianxiety agents, and the least likely involved drugs are antipsychotic agents. In the present study prescription of TCA’s like amitryptiline, doxepine and diazepam was inappropriate. TCA’s like amitryptiline and doxepine because of strong anticholinergic and sedation properties are rarely the antidepressant of choice for elderly patients. Due to the lower burden of adverse effects; SSRI use for elderly people with depression is rationale. Long acting benzodiazepine like diazepam have long half-life in elderly patients (often several days), therefore produce prolonged sedation, increasing the risk of falls and fractures.

Multiple medication, or polypharmacy, is commonly seen in elderly patients. Undesirable effects of polypharmacy include increased risk of adverse drug reaction, decreased compliance, the risk
of drug-drug interactions, which have been shown to increase markedly with the number of drugs taken. Drug utilization study done in Brazil showed an increase in the number of drug used as the age increased, but in our study use of multiple medication did not increase in elderly aged more than 70 years when compared with elderly aged 60 – 70 years. The mean cost per prescription was 9.4 INR per day which is a great financial burden for elderly in a country like India where the per capita income is just 2500 INR per month. Cost per prescription can be reduced by prescribing generic drugs, in this study only 1.8% of drugs were prescribed by generic name.

Conclusion

This descriptive study of treatment patterns in elderly patients demonstrates lorazepam to be the most commonly used benzodiazepine, sertraline the most commonly prescribed antidepressant and risperidone the most commonly prescribed antipsychotic agent. Divalproex is preferred over lithium as a mood stabilizing agent. Combination therapy, rather than monotherapy, is the most common modality of treatment in this setting. Further, elderly population is the vulnerable group in whom there is a need to study the psychiatric illness, drugs prescribed, co-morbidity and drug-drug interaction. For this prospective studies with follow up over a period of time are necessary to know the drugs used, its dosage and tolerability in elderly. This study may be used to understand the current clinical standard of care in elderly, as well as guide future research in comparing the changes in the pattern of prescription.

REFERENCES


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