

Original article

Prescription patterns of psychotropic drugs in hospitalized schizophrenic patients in a tertiary care hospital.

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Abstract

Introduction: Pharmacotherapy plays an important role in the management of schizophrenic patients. The emergence of new atypical antipsychotics has changed the current drug prescription pattern in schizophrenia

Aims: To study the drug-prescribing patterns of psychotropic medications of patients with schizophrenia and to assess the associated adverse drug reactions (ADR).

Materials and Methods: This retrospective study was conducted in St John's medical college, Bangalore, from January 1st 2003 to December 31st 2003. The relevant data from medical records of in-patients from psychiatric ward with the diagnosis of schizophrenia (DSM- 1V criteria), details of psychotropic drugs and associated ADRs were collected and analysed.

Results: Out of 1159 case records reviewed, 178 (15.4%) cases of schizophrenia were included. The mean age was 33.67 (SD=10.8) years with a male to female ratio 1.5. The total number of psychotropic drugs prescribed was 320 with 1.7 drugs per prescription. A majority of patients (60%) were on more than one psychotropic drug. In 9 % of patients antipsychotic poly pharmacy was noticed. The different drug classes prescribed were atypical antipsychotics (53.2%) conventional anti-psychotics (8.6%), anti-cholinergics (21%), anxiolytics (9.3%), anti-depressants (6.6%) and mood stabilizers (2.8%). Risperidone (31.9%) was the most commonly prescribed drug. Risperidone and zuclopenthixole (3.4%) was the most commonly prescribed antipsychotic combination. Adverse drug reactions were identified only in three patients.

Conclusions: A majority of hospitalized schizophrenic patients in tertiary care were treated with atypical antipsychotic drugs but not frequently

with more than one antipsychotic drug. This was coincidental with a decline in ADRs.

Key words: Prescription patterns; risperidone; schizophrenia;

Introduction:

Schizophrenia is a chronic psychiatric disorder and pharmacotherapy plays a major role in its management. The emergence of newer atypical antipsychotics has led to the practice of polypharmacy and has changed the drug-prescribing patterns in schizophrenia 1. Many studies have reported that acutely ill hospitalized patients with schizophrenia are treated with more psychotropic medications including more than one antipsychotic drug 1, 2. Most atypical antipsychotic drugs are now generally considered as the first line of pharmacotherapy for schizophrenia and studies of antipsychotic prescribing pattern for the outpatient treatment of have noticed polypharmacy in 11 to 25% of patients 3. The objectives of this study were to study the current prescribing patterns of psychotropic medications in hospitalized patients with the diagnosis of schizophrenia in the Department of Psychiatry in a south Indian tertiary care hospital

Methods

The medical records of patients who were discharged with the diagnosis of schizophrenia (DSM -1V) from Psychiatry ward of St. John's Medical College hospital from 1st January 2003 to 31st December 2003 were reviewed retrospectively. The patient demographics, psychotropic medications prescribed and the associated adverse drug reactions (ADRs) were collected in a specialized proforma. Investigators confirmed the diagnosis and causality of ADRs based on World Health Organization (WHO)

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definition 4. The data collected were subjected to descriptive statistical analysis.

Results

A total of 1159 case records were reviewed and 178 (15.4%) cases were included in the study. The mean age among patients was 33.67(SD=10.8). The numbers of males were 118 (66.3%) and female patients were 60 (33.7%) in number. The total number of psychotropic drugs prescribed among 178 patients was 320 and the number of prescription per patient was 1.8. About 16 (9%) patients were on anti-psychotic poly therapy and psychotropic poly pharmacy was noticed in 107(60%)patients.

The different classes of psychotropic medications prescribed for patients with diagnosis of schizophrenia at the time of discharge were atypical antipsychotics 165 (51.6%) in number followed by conventional antipsychotic drugs 28(8.4%), anticholinergics 67(21%), anxiolytics 30(9.1%), antidepressants 21 (6.6%)and mood stabilizers 9 (2.8%). The most commonly prescribed drug was risperidone (31.9%) followed by trihexyphenidyl (20.3%), olanzepine (12.3%) and quetiapine(12.3%).

The prescribing prevalence of individual psychotropic drug along with ATC code are explained in table-1. Anti-psychotic poly pharmacy, noticed in 16(9%) patients is explained in table-2. The three cases of ADRs identified based on WHO definitions included gastritis induced by trihexyphenidyl (2 cases) and hypersensitivity reaction induced by risperidone (1 case). According to the causality definitions of WHO all the three ADRs were categorized under probable category.

Discussion

The results of this study showed that 15.4% of patients of the psychiatry ward were admitted with the diagnosis of schizophrenia. The mean age of patients was 33 years. However a recent Indian study has reported that the commonest age group among these patients was below 30 years 5. The male preponderance identified in this study was similar to the study conducted by Mccue et al. 1 The average number of drugs per prescriptions in this study was 1.8. Average number of drugs in a prescription audit is an important factor because

higher number increases the risk of drug interactions. As the mean number of prescriptions were found below two in the present study, the risk of ADRs due to drug interactions and errors of prescribing with polypharmacy were low. Analysis of the prescriptions of psychotropic drugs in this study revealed that the most commonly prescribed drugs in schizophrenics were risperidone (31.9%) followed by trihexyphenidyl (20.3%) while benztropine followed by haloperidol were identified as the commonly prescribed drugs in the study conducted by McCue et al 1. The use of anticholinergics was found in 21% of patients while an Indian study had identified olanzepine as the most commonly prescribed drug with the use of anticholinergics in 50% of patients 6.

Psychotropic poly pharmacy was identified in 60% of patients. As the use of poly-pharmacy for bipolar diseases is now an acceptable approach 6 and the use of multiple medications to treat varying manifestations of schizophrenia could also be acceptable.

In this study atypical antipsychotics (53.2%) were more commonly prescribed compared to conventional antipsychotic drugs (8.4%) and antipsychotic polypharmacy was less unlike the study conducted by Mccue et al. 1 Risperidone (31%) was identified as the most commonly prescribed antipsychotic followed by olanzepine (12.3%) and quetiapine(6.5%). It was also noticed that prescription of chlorpromazine (0.3%) is very limited compared to previous studies 1.

Out of 9% of patients who were prescribed more than one antipsychotic medications, risperidone with zuclopenthixole was the most commonly used combination (3.4%). This finding was not consistent with previous studies which reported olanzepine and haloperidol as the most commonly prescribed antipsychotic combination.1 Also antipsychotic polypharmacy identified (9%) was less compared to previous studies 1. However the rationale for choosing a drug and drug combinations and the validity of the results of this study to other practicing facilities were not investigated.

Unlike previous studies extra pyramidal ADRs were not identified in this study 1. This could be due to increased use of atypical antipsychotics compared to the conventional ones. All the three ADRs identified were of the probable category as identified by WHO causality definitions 4. The

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increased use of atypical antipsychotic drugs together with the increased prescriptions of anticholinergics could probably attribute the decreased incidence of ADRs.

In summary, this prescription audit identified preponderance of atypical antipsychotic drugs compared to previous studies. An increase in the prescriptions of risperidone is noticed unlike in previous Indian and international studies. Antipsychotic polypharmacy was less compared to previous studies. Incidences of ADRs were also

less. Extra pyramidal side effects were not observed at all. Therefore, it could be concluded that a majority of hospitalized schizophrenic patients in tertiary care were treated with atypical antipsychotic drugs but not frequently with more than one antipsychotic drug. This was coincidental with a decrease in ADRs especially extra pyramidal reactions. Pharmacoeconomic studies are needed to establish cost effective treatment strategies in hospitalized schizophrenic patients

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Table-1 Prescribing Prevalence of Individual Psychotropic Drugs

Drug Class	Drug	Number of drugs (n=320)	Percentage of drugs
Antipsychotics	Risperidone	100	31
	Olanzapine	38	12
	Quetiapine	20	7
	Zuclopenthixol	12	4
	Haloperidol	12	4
	Clozapine	9	3
	Chlorpromazine	1	0.3
	Loxapine	1	0.3
Anti-Depressants	Fluoxetine	10	3
	Sertraline	5	2
	Dothiepin	3	1
	Amytryptiline	1	0.3
	Clomipramine	1	0.3
	Mianserine	1	0.3
Anxiolytic drugs	Lorazepam	19	6
	Alprazolam	6	2
	Diazepam	3	1
	Clonazepam	2	0.3

Mood stabilizers	Divalproex	5	1
	Sodium Valporate (Valproic acid)	3	1
	Carbamazepine	1	0.3
Anticholinergics	Benzhexol (Trihexyphenidyl)	64	20
	promethazine	3	1

Table-2 Polypharmacy in patients with antipsychotics

Medication combinations	Patients (N=170)	
	Number	Percentage
Olanzapine+ Risperidone	2	1.1
Risperidone+ Zuclopenthixole	6	3.4
Haloperodol+ Quetiapine	3	1.7
Olanzapine+ Zuclopenthixole	4	2.2
Risperdone+ Haloperidol	1	0.6
Total number of patients with polypharmacy	16	9