Original Article

A STUDY ON DRUG USE PATTERN AND ADVERSE DRUG REACTIONS OF ANTI-PSYCHIATRIC MEDICATIONS IN A PSYCHIATRY SPECIALIZED HOSPITAL

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ABSTRACT

Objective: Anti-psychiatric drugs are associated with a diverse range of peripheral and extra pyramidal adverse effects. These potential adverse effects have led to patient non-compliance to therapy. Hence the study was designed to analyze the drug usage pattern of anti-psychiatrics and the common adverse effects provoked by them.

Methods: In our study, 50 patients on treatment with anti-psychiatric drugs were chosen. The study was carried out in a specialized psychiatric hospital. The patients were segregated on the basis of age, gender, social history, disease diagnosis. The drug usage pattern and common adverse effects of anti-psychiatric drugs was observed.

Results: Chlorpromazine was found to be the most commonly used drug (62%) followed by olanzapine (50%). Weight gain was found to be the commonly induced adverse effect of anti-psychiatrics (52%) followed by tremors (50%).

Conclusion: Better insight and knowledge of the common adverse effects of anti-psychiatric drugs would decrease the incidence of adverse effects. This would eventually increase patient adherence and would enhance therapeutic outcomes.

Keywords: Anti-psychiatric drugs, Adverse drug reactions, Drug Use Pattern.

INTRODUCTION

Anti-psychiatrics are a class of medications used to treat a wide range of mental disorders. These drugs decrease the intensity of psychiatric symptoms such as delusions, hallucinations and depression and thereby enhance the mental well-being of psychiatric patients. However, the diverse range of adverse effects induced by these drugs, has led to patient non-compliance. The common adverse effect of anti-psychiatric medications include weight gain, tremors, sedation, tardive dyskinesia etc., These adverse effects which significantly deteriorates both the physical and mental well being of the patient had led to patient non-compliance to therapy [1]. Weight gain caused by anti-psychotic medications was shown to be a cause of non-adherence and subjective distress [2]. Sexual dysfunction during psychiatric therapy was also shown to cause significant subjective distress which leads to non-adherence [3, 4]. Hence a clear understanding of the adverse effects associated with anti-psychiatric therapy could ultimately yield better therapeutic outcomes and increase patient adherence to medications. This study was designed to analyze the drug use pattern of anti-psychiatric drugs and the common adverse effects evoked by them.

MATERIALS AND METHODS

The study was carried out in a hospital specialized in psychiatry at Tiruchirapalli. This interventional prospective study was carried out for a period of 9 months in the inpatient department of the hospital which includes the general and intensive care units. Consent from the concerned authorities was obtained and permission was granted

to follow up prescriptions in the selected departments in a regular ward round basis with the physicians. A separate data entry form was designed and the collected data was carefully noted. The parameters that were chosen and assessed include age wise segregation, gender wise distribution, social history of the patient, associated diseases, family history, occupation, diagnosis, drugs used and adverse drug reactions.

Inclusion Criteria

Psychiatric patients of both the genders diagnosed with mania, depression, bipolar disorder and schizophrenia.

Exclusion Criteria

Patients who are pregnant and breast feeding, patients with hepatic insufficiency and renal failure and patients taking antacids, cimetidine, biperidine, imipramine, desimipramine, rifampicin, theophylline, valproic acid, warfarin and carbamazepine. Based on the inclusion and exclusion criteria, 50 patients were chosen for studying the drug usage pattern and adverse reactions of anti-psychiatric drugs.

RESULTS

Based on the inclusion and exclusion criterion 50 patients were chosen for the study. Out of the 50 patients chosen, 28 were males (56%) and 22 (44%) were females. The patients were categorized on the basis of their age as shown in Table 1. The patients were further categorized on the basis of their social history as shown in Table 2.

Table 1: Age wise distribution

S. No.	Age (in years)	Total number of Patients (n=50)	Percentage (%)
1	11-20	4	8
2	21-30	20	40%
3	31-40	13	26%
4	41-50	8	16%
5	51-60	5	10%

Table 2: Distribution based on the social history of the patient

S. No.	Social history	Total number of Patients (n=50)	Percentage
1	Smokers	8	16%
2	Alcoholic	4	8%
3	Drug addict	3	6%
4	Alcoholic + drug addict	2	4%
5	Smokers + drug addict	2	4%
6	Smokers + alcoholic	4	8%
7	Neither smokers nor alcoholic	27	54%

Patients were also segregated on the basis of associated diseases or co-morbid conditions. A total of 45 patients (90%) had no associated disease whereas 3 patients (6%) had hypothyroidism, 1 patient (2%) had epilepsy and 1 patient (2%) had diabetes mellitus with hypertension and myocardial infection.Out of the 50 patients 6 patients (12%) had an earlier family history whereas 44 patients 44 patients (88%) had no family history of psychiatric illness. Segregation based on the type of patients showed that a total of 20 patients (40%) where newly diagnosed with psychiatric disorders whereas 30 patients (60%) had a relapse of previous illness.

Occupation based segregation was also carried out. 15 patients (30%) were found to be house wives, 6 patients (12%) were running business, 9 patients (8%) were doing agriculture, 2 patients (4%) were unemployed, 5 were students (10%), 2 were daily wage workers (4%), 8 were employees (16%) and 3 were doing other occupations (6%).

Segregation was done on the basis of disease diagnosed and the distribution of data is shown in Table 3. Drugs use pattern in prescriptions are tabulated in Table 4.

Table 3: Distribution based on the diagnosis of disease

S.No.	Disease diagnosed	Total number of Patients (n=50)	Percentage
1	Psychosis	15	30%
2	Mania with psychotic features	8	16%
3	Mania without psychotic features	2	4%
4	Depression with psychotic features	1	2%
5	Paranoid schizophrenia	20	40%
6	Mixed episode	2	4%
7	Hypomania	1	2%
8	Catatonia and affective schizophrenia	1	2%

Table 4: Drug Usage pattern of Anti-psychiatric Drugs

S.No.	Social history	Total number of Patients (n=50)	Percentage
1	Chlorpromazine	31	62%
2	Olanzapine	25	50%
3	Nitrazepam	24	48%
4	Risperidone + Trihexyphenidyl HCl	9	18%
5	Divalproate Sodium	12	24%
6	Haloperidol + Promethazine	18	36%
7	Lorazepam	16	32%
8	Risperidone	13	26%
9	Acamprosate	1	2%
10	Chlordiazepoxide	1	2%
11	Haloperidol injection	6	12
12	Amisulpride	3	6
13	Trihexyphenidyl	3	6
14	Clozapine	1	2
15	Sertaline hydrochloride	3	6
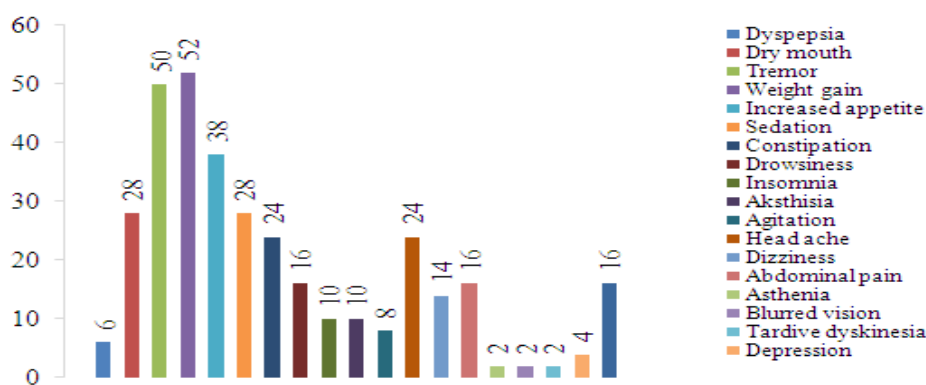
Fig. 1: Adverse Drug Reactions of Anti-psychiatric Drugs

Chlorpromazine was found to be the most commonly used drug. Out of the 50 patients selected for the study, Chlorpromazine was used in 31 patients (62%) with different psychiatric illness.Adverse drug reaction of the anti-psychiatric drugs used was studied. Weight gain was found to be the most common adverse drug reaction. Out of the 50 patients subjected to the study, weight gain was observed in 26 patients (52%). The second common adverse drug reaction was found to be tremor which was observed in 25 patients (50%). The adverse reactions to anti-psychiatric medications observed in the patients are shown in Figure 1.

The attempt to identify and analyze adverse reactions of anti-psychiatric drugs also revealed that that 3 of the patients had Dyspepsia, 14 patients had Dry mouth, 19 patients had Increased Appetite, 14 patients had sedation, 12 patients had constipation, 8 patients had drowsiness, 5 patients had Insomnia, 5 patients had Akasthisia, 4 patients had Agitation, 12 patients had head ache, 7 patients had dizziness, 8 patients had Abdominal pain, 1 patient had Asthenia, 1 patient had Blurred vision, 1 patient had Tardive dyskinesia, 2 patients had Depression, 8 patients had Anxiety and 1 patient had Nausea.

DISCUSSION

Weight gain was found to be the most common adverse effect induced by anti-psychiatric therapy. The second generation anti-psychotics clozapine and olanzapine are known to cause weight gain. A direct link between cytokines and increase in body mass index (BMI) following Olanzapine therapy has also been described [5]. Olanzapine also impairs glucose regulation and causes dyslipidemia which leads to increase in body fat [6, 7]. Increase in serum leptin level was also attributed as a cause of weight gain in patients treated with second generation antipsychotics [8].

Second generation anti-psychotics Olanzapine and Clozapine have low propensity of extra pyramidal side effects compared to conventional anti-psychotics. However they induce tremors, akasthisia and tardive dyskinesia [9]. 10% Of the patients experienced akasthisia during anti-psychotic therapy. Though the mechanism of development of akasthisia is not well understood, it has been postulated that it is due to dopamine receptor blockade in areas other than the nigrostriatum such as the meso-cortical areas [10]. A comparative study between olanzapine and chlorpromazine showed olanzapine to be more efficacious and tolerable in patients with schizophrenia. Incidence of weight gain and akasthisia were also found to be less common than chlorpromazine [11]. In our current study, chlorpromazine was the most widely used drug (62%) and the most common observed adverse effect was weight gain (52%) which correlates with the results of the above study. Pathophysiological mechanisms of the other observed adverse effects are demonstrated in various other studies.

CONCLUSION

Drug use pattern and common adverse effects of anti-psychiatric drugs were analyzed in the above study. The most commonly observed adverse reactions in 50 patients were weight gain, tremor, increased appetite, sedation and dry mouth. Thorough knowledge of the common adverse effects of anti-psychiatric drugs would decrease their incidence and increase patient adherence and enhance therapeutic outcomes.

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