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Antipsychotic Drugs Prescription Pattern among Patients with Schizophrenia in a Federal Neuropsychiatric Hospital Maiduguri, North East Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author POO designed the study, wrote protocol, performed statistics and drafted initial manuscript. Authors AA and AYK collected data, performed statistics, managed literature search, proof read final draft of manuscript. All three authors have read and approved the final draft of manuscript.

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ABSTRACT

Introduction: Schizophrenia is a mental disorder characterised by delusions, disorganised thought and speech, hallucinations, blunted affect and reduced motivation among other clinical manifestations. Antipsychotic medications have demonstrated effectiveness in reducing symptoms and improvement in the quality of life of patients. In recent years emphasis has been shifting to using atypicals as first-line therapy primarily because of their ability to improve both positive and negative symptoms and reduced incidence of side effects. In Nigeria, there is paucity of data as to whether or not if this transition is taking place and to what extent.
Objectives: To determine the antipsychotic drugs prescription pattern, assess the extent of prescription of atypicals as well as determine level of co-prescribed medications.
Methods: This was a cross-sectional retrospective study carried out in Federal neuropsychiatric hospital, Maiduguri. The sample size of 360 was used [Taro Yamane formula] and medical records

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were sampled using systematic random sampling. Data were analyzed using SPSS 20 for descriptive statistics.
Results: There were more males [54.2%] and meant age was 36.5 ± 17.9 years. Typical antipsychotic drugs were the most prescribed accounting for 79.2% of all prescriptions. Trifluperazine was the most prescribed [56.1%] either alone or in combination, while Olanzapine and Risperidone accounted for about 20% of antipsychotic medications.
Discussion: The typicals may be cheaper and readily available but the prescribers are yet to change their habits despite evidence that atypicals are the first line recommendation. The result is a contrast to several studies in which atypicals is now extensively prescribed. Globally the use typicals declined over the last decade, and there is need to follow this trend.
Conclusion: The widespread prescription of typicals is not consistent with current recommendation, so there is need to switch to atypicals that have demonstrated better benefits to patients.

Keywords: Schizophrenia; antipsychotics; prescription pattern; co-medication.

1. INTRODUCTION

Antipsychotic medications have evolved over the last six decades, since the chlorpromazine was introduced into clinical management of schizophrenia. Pharmacotherapy with this class of drugs has been the mainstay of management of schizoaffective disorders [1,2] The two main classifications of antipsychotic medications are broadly referred to as typical or atypical representing first and second generation antipsychotics. These two classes of drugs have produced significant clinical improvement in relieving symptoms of schizophrenia though differences exist in clinical efficacy and associated side effects. Evaluation of clinical outcomes showed that typicals largely produce better results with positive symptoms, though they are associated with higher incidence of extrapyramidal side effects. Atypical antipsychotics on the other hand are good at controlling both positive and negative symptoms and have fewer incidence of extrapyramidal side effects [3,4,5]. The clinical efficacy and side effect profile of drugs vary widely within and between drug classes [4]. The superiority of atypical antipsychotics as monotherapies in schizophrenia has been reported in several studies [6,7,8,9].

Antipsychotic prescription pattern vary widely between countries and healthcare facilities largely because of differences in health care models, costs and availability of drugs [10,11]. Other studies suggest that antipsychotic prescription pattern may arise out of clinical experience, therapeutic responses, and socio-demographic characteristics of patients. For instance a study in Belgium showed that most patients received atypicals as monotherapies, while a similar study in Germany reported that only about ten percent were given a single antipsychotic drug [12,13]. The transition from first to second generation antipsychotic drug prescription has occurred in some countries, several studies reported that atypicals are the most frequently prescribed antipsychotics [14,15,16,17,18,19]. In contrast high level of prescriptions of typical antipsychotics is still common in Nigeria [9,20,21].

In recent years, emphasis has shifted to the use of atypicals as first line monotherapy in treatment of schizophrenia, though typicals still remain a significant component of treatment of schizoaffective disorders [22]. While monotherapy is encouraged, many patients would require more than one antipsychotic drug to control symptoms. The combination of antipsychotics may include concomitant use of more than one drug which may be a combination of typicals or atypicals. It may also involve the prescription of atypical and typical antipsychotics together as well as combination with mood stabilizers, anxiolytics, anticholinergics and antidepressants [15,23]. The frequency of antipsychotic combination therapy vary widely often ranging from 9 – 94% [23,24,25]. The use of combination therapies is usually indicated when monotherapy produces suboptimal therapeutic response to a single drug.

Many studies have consistently demonstrated benefits of antipsychotic medication therapy even though clinical outcomes are far from predictable. In a five year follow up study of patients about 62% had overall improvement [26]. A further breakdown indicated that about a third had full recovery and another third showed good recovery while the rest remained ill [27].

Antipsychotic medication therapy is able to reduce symptoms and ultimately improve the quality of life of patients [28]. In Nigeria recent

studies indicate that typical antipsychotics are still more frequently prescribed despite the fact that the trend is changing around the world following supporting evidence from meta-analysis and clinical trials [29,30].

Antipsychotic drugs prescription pattern is expected to reflect current treatment guidelines and best clinical practices [31,32]. This is particularly important in the poor resource settings where relapses and re-hospitalization can be a significant economic burden.

The aim of this study is to assess antipsychotic drugs prescription pattern and extent of use of new generation atypicals.

2. METHODS

2.1 Setting

The study was carried out in the federal neuropsychiatric hospital Maiduguri.

2.2 Study Design

This was a cross sectional retrospective study covering a period of eighteen months (March 2016 – October 2017).

2.3 Sample Size and Sampling

Sample size of 360 was obtained using Andrew Fisher method for calculating sample size of population less than 10,000 at 95% confidence level. A total of three hundred and sixty medical records of patients receiving treatment in the hospital within the study period were selected using systematic random sampling method.

2.4 Data Collection

Data on demographics, diagnosis, comorbidities and antipsychotic medications prescribed were extracted into data collection forms.

2.5 Analysis

The data were entered into SPSS 20 for descriptive statistics and results were expressed as mean, standard deviation and percentages.

3. RESULTS

Demographic data showed that there were more male patients (54.2%) compared to females (45.8%) with a mean age of 36.5±17.9 Years. Over two third of patients were 45 years and below suggesting that younger people are affected. The three leading comorbidities included peptic ulcers, depression and epilepsy.

Table 1. Demographic data

	Number [n]	Percentage [%]
Gender [n = 360]		
Male	195	54.2
Female	165	45.8
Occupation [n = 360]		
Civil servant	47	13
Private sector employed	13	3.4
Self-employed	84	23.4
Unemployed	68	18.9
Students	40	11.2
Housewives	84	23.4
Farming	24	6.7
Marital status [n = 360]		
Married	208	57.9
Single	107	29.7
Divorced	27	7.3
Widow	18	5.1
Age distribution [n = 360]		
≤ 18 years	14	3.7
18 – 25 years	114	31.5
26 – 35 years	82	22.9
36 – 45 years	68	18.9
46 – 55 years	22	6.2
56 – 65 years	32	8.9
≥ 65 years	32	7.9
Comorbidities [n = 188]		
Epilepsy	39	10.8
Hypertension	34	9.4
Depression	43	11.8
Diabetes mellitus 2	16	4.4
Peptic ulcer disease	56	15.5

The result showed that over two thirds of prescriptions contained either monotherapy or combination of typical antipsychotic drugs.

Antipsychotic drug combinations included Trifluperazine and either Haloperidol, Chlorpromazine or Fluphenazine. Overall about 90% of patients received anticholinergic [Benzhexol] and less than 10% were given antidepressant [Amitryptiline], anxiolytic [Diazepam] and anticonvulsants [Carbamazepine]. Prescription of typicals accounted for two third of all antipsychotic medications.

The result showed that Trifluperazine was the most prescribed typical antipsychotic medication

accounting for over half of all typicals, followed by Haloperidol. Among the atypicals, Risperidone and Olanzapine were given to about 10% of patients.

Majority of patients were given anticholinergic drug [Benzhexol] either for prophylaxis or control of extrapyramidal side effects [89.7%].

4. DISCUSSION

Schizophrenia is a lifelong disorder of varying degrees of functional impairment and treatment offers the best chance of possible return to near normal life. Demographic data showed that there were more males with the disorder comparable to several previous studies [33,34,35]. The results of this study is however different from other reports which indicated the higher prevalence of schizophrenia in females [36,37,38]. Some studies reported that students, unemployed and housewives had prevalence in that order of decreasing frequency [34,37] which contrast with result of this study.

The results also showed that there were more married people which contrasts with other studies that reported that majority of patients were single people [37]. Majority of patients had diagnosis of schizophrenia between the ages of 18 – 45 years which is consistent with several previous studies [35,38,39]. Antipsychotic drugs prescription pattern showed that typicals remain the most prescribed class of drugs in the facility. This result is not consistent with many studies which reported that atypicals have become the first line antipsychotic drugs for patients with schizophrenia [40]. The use of atypicals in this study is low compared to previous studies [14,16,18].

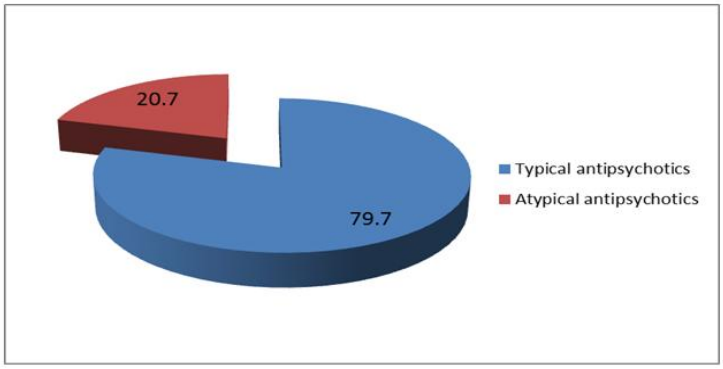

Fig. 1. Class of antipsychotic drugs

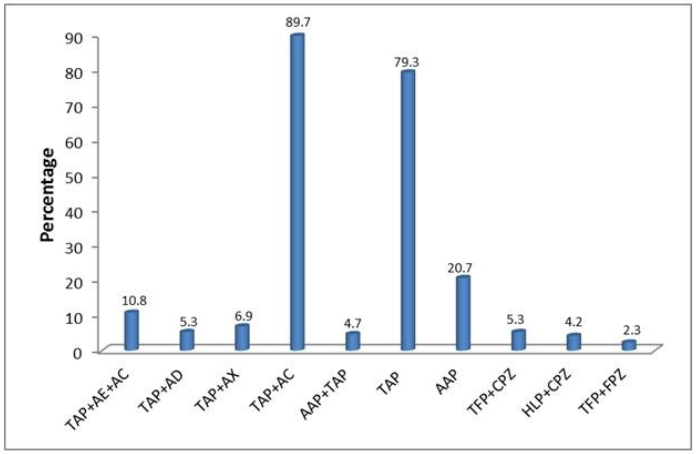

Fig. 2. Antipsychotic drug combinations

Key: TAP = Typical antipsychotics, AE = antiepileptic, AD = antidepressant, AX= anxiolytics, AC= anticholinergics, AAP = atypical antipsychotics, TFP = Trifluperazine, CPZ= Chlorpromazine, FPZ=Fluphenazine, HLP = Haloperidol

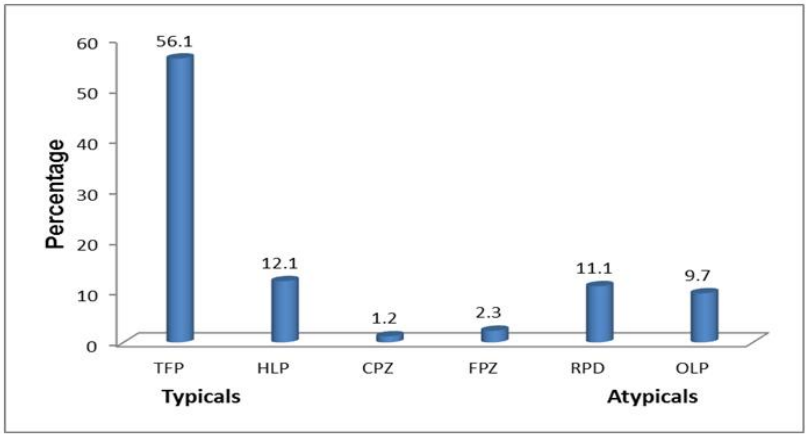

Fig. 3. Antipsychotic drugs

Key: TFP = Trifluperazine, HLP = Haloperidol, CPZ = Chlorpromazine, RPD = Risperidone, OLP = Olanzapine

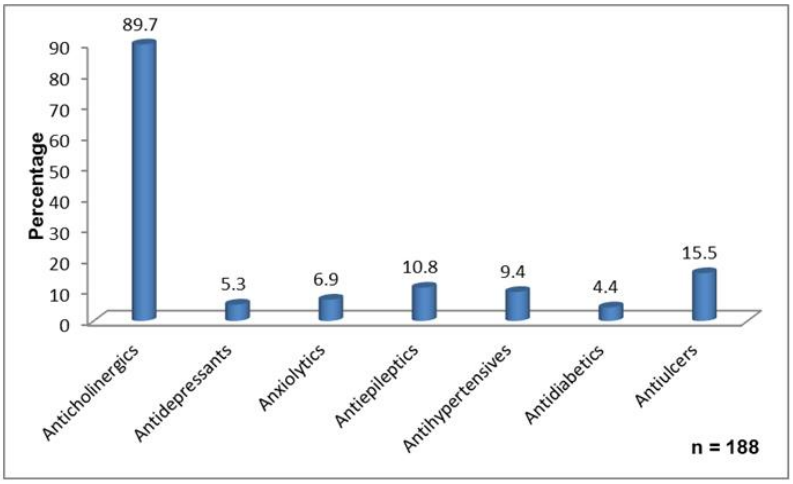

Fig. 4. Drugs for comorbidities

The use of typical antipsychotic drugs have been on the decline globally as several studies have indicated [40,41,42,43]. The greater preference for atypical antipsychotics is primarily due to their better tolerability, lower incidence of extra pyramidal side effects, ability to improve both negative and positive symptoms as well as being efficacious even in resistant schizophrenia [31,32,44]. Evidence from meta-analysis and clinical trials has lead experts to recommend that atypicals should be first line antipsychotic treatment for schizophrenia [29,30].

The high level of typical antipsychotic prescriptions may in part be due to availability and comparatively lower costs [45,46,47] , but it also raise concerns about readiness of physicians to switch to new treatment guidelines [8]. There is no doubt that typical antipsychotics still have a place in treatment of schizophrenia either alone or in combination [9,20,21,22], however there is need to adopt current treatment guidelines which emphasize the use of atypicals as first line treatment. The clinical benefits of atypical antipsychotics outweighs concerns of cost and affordability.

5. CONCLUSION

The prescription of first generation typical antipsychotic drugs is high; there is need to encourage switch to second generation atypicals because of their many comparative clinical benefits to patients.

CONSENT

It is not applicable.

ETHICAL APPROVAL

Ethical approval was obtained from the health research committee of Federal neuropsychiatric hospital, Maiduguri, Borno State.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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