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Utilization Pattern of Antipsychotics at a Tertiary Care Hospital in Oman

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Abstract

Introduction: Antipsychotics, classified into typical and atypical, are a corner stone in the treatment of schizophrenia. Their use varies among countries due factors such as cost, efficacy and side effects. Little information is known about the use of these agents in the developing countries.

Objective: To describe the utilization pattern of antipsychotics among adult patients attending Sultan Qaboos University Hospital (SQUH), a tertiary care hospital in Oman.

Method: Data from January to March 2013 for patient prescribed antipsychotics at SQUH was retrieved retrospectively after obtaining ethical approval.

Results: Among 535 analyzed records, females accounted for 57.3% of prescriptions and the age group between 18 to 39 years constitutes the major (54.7%) utilizer of antipsychotics. Atypical antipsychotics accounted for 68.8% of prescriptions. Olanzapine was the most common prescribed atypical drug (48.1%) while haloperidol was the most utilized (34.1%) typical agent. Schizophrenia was the main indication for the use of antipsychotics (26.9%) followed by depressive disorders (23.2%) and bipolar affective disorder (11.6%). Monotherapy accounted for the majority (93.0%) of prescriptions.

Conclusion: At SQUH atypical antipsychotics accounted for the majority of antipsychotic prescriptions which is in-line with most standard therapeutic guidelines recommendations for the treatment of psychotic disorders. Further research exploring the tolerability and outcome of such treatment is needed.

Keywords: Antipsychotics; Schizophrenia; Olanzapine; Haloperidol

Introduction

Antipsychotics are the mainstay agent for the treatment of schizophrenia and other psychotic disorders. They are categorized into typical (first generation) and atypical (second generation) agents. There is a variation in the prescribing pattern of these two categories across different part of the world, particularly with respect to the medications favored within each category [1-3]. The variation is attributed to various factors such as side-effects profile, patients' characteristics, concomitant diseases and cost [1-5]. However, the major factor that affects the prescribing trends of these antipsychotics among developed and developing countries is the cost despite treatment guidelines recommendation where atypical antipsychotics are considered as the first pharmacologic option for schizophrenia [5-8]. In East Asian region (China, Hong Kong, Japan, Singapore and Taiwan) and among 2368 patients, 44% were receiving a single antipsychotic agent and half of these agents (53.3%) were typical ones [5] In Australia, however, the atypical drugs were the most used antipsychotics (77.3%) and olanzapine was the most prescribed drug [9].

In Oman, as with the rest of the developing world, there is scant data and no documented study about the utilization pattern of antipsychotics, despite the annual increase in the incidence of mental disorders by 8.4% from 2010 to 2011, with total number of 78,559 cases in 2011 [10]. Therefore, the aim of this study is to describe the prescribing pattern of antipsychotic medications in adult patients at a tertiary care hospital in Oman.

Methods

This retrospective study was conducted at Sultan Qaboos University hospital (SQUH), a tertiary health care facility in Oman. The database of adult (≥ 18 years) patients receiving antipsychotics medications where retrieved from electronic patient records "TrakCare", the Hospital Information System, in the period of January to March 2013. A standard data collection form was used to collate information about demographic characteristics such as sex, age and weight; data about disease such as type of disease, comorbidities and duration and data about medications such as type, concomitant drugs and recorded side effects. In addition, the biochemical markers for glucose level and lipid profile were collected.

An ethical approval was sought and obtained from the Medical Ethics Committee at Sultan Qaboos University before conducting the study.

Statistical Analysis

For categorical variables, frequencies and percentages were reported. For continuous variables, mean and standard deviation were used to summarize the data. Statistical analyses were performed using

Statistical Package of Social Sciences version 15 (SPSS, Inc., Chicago, IL, USA).

ratio was 0.74: 1.0. More than half of the patients (54.7%) were between the ages of 18 to 39 years (Table 1).

Results

A total number of 535 patients were recruited. Their mean age was 41.3 ± 15.9 years with a range of 18-98 years. The male to female sex

		N	Typical	Atypical
Sex				
	M	224	62	162
	F	301	95	206
Age (years)				
	18-28	115	35	80
	29-38	154	44	110
	39-48	95	35	60
	49-59	76	21	55
	≥60	85	22	63
Duration (years)				
	1-5	277	31	246
	6-10	176	78	98
	>10	25	15	10
	Unknown	47	33	14
Co-morbidities				
	None	307	94	213
	Diabetes & Hypertension	28	19	9
	Epilepsy	6	3	3
	Asthma	4	1	3
	Others	21	8	13
	No reports	159	32	127
Concomitant drugs				
	None	60	20	40
	Central Nervous Agents	352	86	266
	Antimuscuranic	71	30	41
	Cardiovascualr	50	24	26
	Others	78	23	55

Table 1: Gender, age, disease duration, co-morbidities and concomitant drug use of studied population (N =525)

More than two thirds of the patients (368, 68.8%) were prescribed atypical antipsychotics while the rest were on typical antipsychotics (157,29.3%) and lithium (10,1.9%). The most used atypical agent was olanzapine (177,48.1%) followed by risperidone (125,34.0%), aripiprazole (55,15.4%) and clozapine (8,2.2%). For typical ones

haloperidol was used in 57 (34.1%) of patients followed by chlorpromazine (38,22.8%), prochlorperazine (31,18.6%) and trifluoperazine (15, 9.0%) (Table 2).

Single antipsychotic drug use account for the majority of prescription (93.0%). Added typical and atypical antipsychotic to treatment regimen accounted for 3.2% and 3.8% of prescription, respectively.

The most common indication for use of antipsychotics was schizophrenia (132,25.1%) followed by depressive disorders (114, 21.7%) and bipolar affective disorder (60,11.4%). Other indications included nausea and vomiting, dizziness, epilepsy, dementias and others (Table 2).

The most concomitant drugs are those affecting central nervous system (CNS) (352,63.9%) followed by anti-muscarinic drugs (71, 12.9%) (Table 1).

Among co-morbidities, diabetes and hypertension were the highest (28,47.5%) followed by epilepsy (6,10.2%) and asthma (4,6.8%)(Table 1).

Data about side effects were not reported in the majority of patients (458, 85.6%). Few patients reported weight gain while on antipsychotics (77,14.4%). Similarly effect of antipsychotics on glucose or lipid profile could not be retrieved due to lack of data.

		N	Schizophrenia	Depressive Disorders	Bipolar Disorder	Dementia	Dizziness	Nausea & Vomiting	Others	Not Reported
Typical		157	34	31	10	5	15	16	23	25
	Haloperidol	57	15	10	5	5	-	-	8	14
	Chlorpromazine	38	9	8	2	-	1	2	9	9
	Prochlorperazin	31	-	3	-	-	14	14	-	-
	Trifluoperazine	15	3	7	-	-	-	-	3	2
	Flupentixol	8	1	3	1	-	-	-	3	-
	Fluphenazin	4	4	-	-	-	-	-	-	-
	Zuclopenthixol	4	2	-	2	-	-	-	-	-
Atypical		368	98	83	50	7	2	-	76	52
	Olanzapine	177	46	42	30	4	2	-	30	23
	Risperidone	125	33	26	13	2	-	-	32	19
	Aripiprazole	57	14	15	5	1	-	-	13	9
	Clozapine	9	5	-	2	-	-	-	1	1

Table 2: Indications for the use of antipsychotics drugs (N=525)

Discussion

This study offers an insight into the trend of prescribing pattern of antipsychotics in Omani population and perhaps the region. It also forms a database for future research and pattern comparison. The ratio for use of atypical: typical antipsychotics in our study (2.3:1) is somehow similar to what is reported in Western world and higher than other developing countries [5,9,11-14]. One reason for this might be attributed to the economic status of the countries. Due to their efficacy and low side effects profile atypical antipsychotics are considered in most standard guidelines to be the first line pharmacologic treatment for schizophrenia [15-17]. However, as they are much more expensive than typical antipsychotics and as the treatment of schizophrenia with antipsychotics needs to be long life for some patients, their use in countries with low economical income is low [2,5,8,18]. For such reason, even in the early 2000s in the United States, there was a variation in the utilization of typical and atypical antipsychotics among different ethnic groups [19].

The continuing use of typical antipsychotic in our population especially to new cases can be due to contraindications for use of atypical ones, such as for patients with high risk of diabetes. Furthermore, those patient who been using typical antipsychotics for long time and showed improvements with their use will still continue to be prescribed the same drugs unless they show adverse effects or decrease effect/improvement with drug.

In contrary to other studies, females were found to be the most utilizer of antipsychotics in our study [5,6,11-14]. This may be due to the higher incidence and prevalence of mental health morbidities as well as the total visits in psychiatric clinics among females than males as reported in the annual report of Ministry of Health in Oman (MOH) [10].

The age distribution between 20 to 50 years was the major consumer (68%) for antipsychotic drugs. The annual report of MOH in Oman described that the age from 20 to 44 years has the highest

prevalence and incidence of mental health morbidities [10]. This was somehow similar to what was reported in East Asia where the mean age was 43.6 +/- 12.5 years [5].

Olanzapine was the most common prescribed atypical antipsychotic drug. This finding is similar to reports conducted in Canada and Hong Kong [5,13]. In China clozapine was the most used atypical agent but in SQUH it was the least used atypical antipsychotics drug [5]. This difference might be due to the physician preferences and availability of generic versus brand choices. For typical antipsychotics, haloperidol followed by chlorpromazine was the commonest used agents in SQUH, which is also similar to the Canadian and Australian studies [9,11]. Both drugs are included as essential medicines used in psychotic disorders by WHO [20]. Haloperidol was the main drug used in schizophrenia in our study, while chlorpromazine was the main agent for this indication in other countries [6,14].

The most common indication (132, 25.1%) for use of both atypical and typical antipsychotics was schizophrenia. This is in-line with most guidelines recommendation [4,8]. Other uses included depressive disorders (114, 21.7%) and bipolar affective disorder (60, 11.4%). Some agents such as prochlorperazine were primarily used for nausea, vomiting and dizziness. About 15% of inductions for the use of antipsychotics were not labeled in patient's records and thus they were not used in analysis.

The use of a single antipsychotic was found in 93.0% of patients. This pattern is similar to most of studies [11-14]. The most concomitant drugs given along with antipsychotics are those affecting CNS. Patients with psychiatric disorders might also suffer from other mental/brain related conditions thus the use of drugs affecting CNS. The second common concomitant drugs were anti-muscarinic drugs. Although atypical antipsychotics are known to be less associated with muscarinic side effects than typical ones but they are not totally devoid of such side effects and this might explain the prescribing of these agents in our patients.16 Furthermore some other comorbid conditions might require the use of anti-muscarinic drugs such as dizziness and dementia.

Diabetes mellitus and hypertension were the most common comorbidities reported in our patients. It is possible that this might be the cause for the contraindication of prescribing atypical antipsychotics, been a side effect of antipsychotics or just co-incidence [21-22]. However, we were not able be judged the relation because no clear time relation data were available.

The antipsychotics, both typical and atypical, can cause weight gain, though it is more common with atypical antipsychotics [23-24]. However, data about weight was missing from majority of our patient records. This might be due either the irregular measurement of weight in their records or no follow up of weight is carried out by the treating physicians.

Limitations

Although this the first report exploring the utilization of antipsychotics in Oman, however, there are several limitations to it. First, as with any retrospective study some data were not available to make conclusion especially with treatment outcome, doses, tolerability, and side effects. Second, we could not follow up patients records to determine if atypical antipsychotics being prescribed as first line or as replacement for typical ones. Third the utilization of these

agents at SQUH might not represent all Oman and thus extending the results to all country cannot be made with confidence.

Conclusion

This survey have showed that the atypical antipsychotics olanzapine and risperidone constitutes more than one third (35.3%) of antipsychotic prescriptions. Almost all patients received one antipsychotic agent in keeping with most standard therapeutic guidelines. Further studies are required to examine the outcome of these prescription and their effects on metabolic and other physiologic profiles of patients.

Declaration

The authors declare that they have no conflict of interest to disclose. We confirm that we have read the journal position on issues involved in ethical publication and affirm that this report is consistent with these guidelines.

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