Appropriateness of antipsychotic drugs prescribed for First episode psychosis by clinicians at Chainama Hills college hospital in Lusaka

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Mental health disorders pose an increasing burden on societies all over the world Notable one is Psychosis, a debilitating condition that presents as marked distortion in thinking and perception, whose first presentation of symptoms in a newly diagnosed patient requires accurate and evidence based drug treatment. Patients with first episode psychosis may present in a variety of clinical settings to providers who have a range of knowledge and skills. This study aimed to assess the appropriateness of antipsychotic drugs prescribed by clinicians in the management of first episode psychosis.

A cross sectional study to assess appropriateness of antipsychotic drugs prescribed in the management of first episode psychosis using convenient sampling method and the NICE 2014 antipsychotic treatment guidelines as gold standard was conducted at Chainama hills college hospital in Lusaka.

There were a total of 31 prescribers assessed for this study 38.7% psychiatrists and 61.3% clinical officer psychiatrists. The proportional difference of the two groups of prescribers assessed was not statistically significant, P-value = 0.21. Risperidone was the most frequently chosen antipsychotic with 58.1% of the respondents. Overall, there were 96.8% prescribers who did not prescribe anti psychotics in line with published guidelines. 3.2% of prescriber did prescribe in line with NICE 2014 guidelines.

The front-line clinicians who encounter patients with first episode psychosis may have significant gaps in the initial and follow-up care of these patients. Given the preliminary nature of this study and the debate about the optimal care for first episode psychosis, further study with larger sample size is needed. If such gaps are confirmed additional educational interventions are required to align clinical management with published practice guidelines

Introduction

Psychiatry, as in all branches of medicine, an ever- expanding range of therapeutic options to treat psychosis is being created. And one response to this evolving complexity has been the development of guidelines (Evidence –based practices) for which there is scientific evidence consistently showing that they improve client outcomes, also

intended to inform and influence clinical practice. Fenton [1]. A proximal goal of practice guidelines is to promote the use of effective therapeutic interventions and reduce inappropriate variations in clinical practice [2].

In First-episode Psychosis, antipsychotic pharmacological treatments should be introduced with great care due to the higher risk of extrapyramidal symptoms (EPS). Appropriate strategies include gradual introduction of antipsychotic medication with the lowest possible effective dose, combined with careful explanation [3]. This should so because, patients with First-episode psychosis exhibit increased treatment responsiveness and an increased sensitivity to adverse effects. Therefore, antipsychotic treatment should be started with lower doses [4]. Extrapyramidal side effects from antipsychotic treatment should be avoided in order to encourage future adherence to medication. Although typical antipsychotics maybe efficacious as atypical antipsychotics in reducing positive symptoms, they are frequently not well tolerated at low doses. For this reason, atypical antipsychotics should be used as first line therapy, commencing with a low dose and titrating upwards very slowly over a period of several weeks [5].

However, such practices in clinical set ups are far-fetched as studies have found that clinicians are particularly reluctant to recommend antipsychotic treatments in consent with treatment guidelines and follow their dosage recommendations. Disease-specific treatment guidelines serve as a useful tool for effective clinical management [6].

Methods

This was a cross sectional, descriptive study design that assessed appropriateness of antipsychotic drugs prescribed for the management of treatment First- episode psychosis by clinicians at Chainama Hills college hospital.

A clinical case vignette, presenting a patient with first-episode psychosis was administered to prescribers. This is because Formal assessment of guideline adherence by prescribers' ability to evaluate and treat first –episode psychosis is challenging. Closed-ended multiple-choice questions and other commonly used assessment tools are unlikely to reflect clinical practice. In contrast, clinical case vignettes that allow free-form responses to open-ended questions appear to closely assess adherence as measured by chart reviews and simulated patients and are more efficient than these other measures of adherence [7].

Hence in this study, we described our preliminary study of the mental health prescribers' ability to provide guideline-adherent treatment of patients with First-episode psychosis as measured by responses to a clinical case vignette.

The study population included Psychiatrists, Master of Medicine Students of Psychiatry, Resident doctors and clinical officer Psychiatry who are mandated by law to prescribe antipsychotics and treat mental patients in Zambia and based at Chainama hills college hospital.

The data source was the clinical case vignette of a patient presenting with classical symptoms of psychosis on first presentation. The vignette had four open-ended response questions.

Individual Prescriber were consented in written at a place of their convenience. The participant was asked to provide free-form written responses to open-ended questions at strategic points during the case.

The first two questions related to assessment of First- episode psychosis in general.

On the front side of the response form, Question 1 asked about differential diagnosis, and Question 2 inquired about the next steps in evaluation of the patient. On the reverse side of the form, the Participant was then instructed to assume that the patient is diagnosed with schizophrenia. Hence, they will be asked to provide answers to Question 3 regarding first-line medication treatment (including type, name, initial dose and target dose of treatment). Finally; Question 4 asked for the proposed duration of treatment once the patient's symptoms had remitted.

To generate the numerical scoring system for the free-form responses, published guidelines [8] were reviewed on the assessment and treatment of schizophrenia.

In this study both Descriptive and Inferential statistic were used. All statistical tests were two tailed and significance was set at $P < 0.05$ [9].

Response frequencies for all questions were recorded with specific focus on the Proportion of Prescribers who recommended a toxicology screen and other medical work up (Question 2), Antipsychotic treatment most frequently chosen and mean target dose (Question 3) and Mean duration of Antipsychotic treatment the prescriber planned to put the simulated patient in the vignette on, after the remission of symptoms (Question 4).

All statistical tests were at 5% significance

level. The Pearson's chi-squared test was used for comparison of proportions between psychiatrists and clinic officer psychiatry.

For each prescriber who attempted the clinical case vignette, the score for the four (04) total questions and each of the individual questions were tabulated. in addition, the combined mean scores for assessment questions 1&2 and treatment questions 3&4 were calculated and an independent sample *t*-test was used to compare the performance between pooled assessment and pooled treatment questions to determine whether performance between these domains differed. The maximum score for each question was four and the maximum attainable score was 16 points.

With regards to impact of discipline on overall performance on all questions, all consenting Prescribers were required to provide information on their profession discipline. This was in order to make it possible to perform *t*-test to determine whether there were group differences. Differences were examined between Doctors and Clinical officers Psychiatry. These evaluations were performed using total score on individual questions and pooled scores on the assessment and treatment questions as the dependent variable in separate analyses.

Overall assessment of appropriateness of antipsychotic drugs was measured as a percentage of adherence to treatment NICE guidelines, a percentage arising from the combined mean scores for assessment questions 1&2 and treatment questions 3&4using Traffic-Lights system.
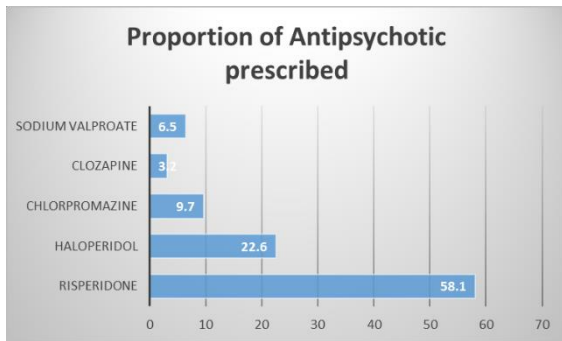
Results

The results of the study showed that there were 50% female psychiatrist and 50% male psychiatrists as opposed to 15.8% female clinical officer psychiatry and 84.2 % male clinical officer psychiatry.

The results showed that of the Five prescribed antipsychotics, the majority of the respondents prescribed Risperidone an atypical antipsychotic drug 58.1% as opposed to Haloperidol with (22.6%). The study further shows that the mean initial dose and target dose for Risperidone was 3.2 $\pm$ 1.92 and 8.1 $\pm$2.22 respectively (fig 1and table 1).

Figure 1 shows a higher proportion of prescribers prescribed Risperidone at 58.1% Figure 2 Shows percentage of duration of treatment recommended.

The study found that a slightly larger proportion of prescribers did not recommend

any treatment duration (32%).The overall mean treatment duration was 0.7 years ± 0.3.

Table 1 Antipsychotics (mean initial and target doses) selected by prescribers

Antipsychotic	Number (%)	Mean initial dose (mg)	Mean target dose (mg)
Risperidone	18 (58.1)	3.2 ± 1.92	
Haloperidol	7 (22.6)	6.0 ± 3.86	10.7 ±4.50
Chlorpromazine	3 (9.7)	83.3 ± 28.87	133.3 ±57.74
Clozapine	1 (3.2)		
Sodium Valproate	2 (6.5)		

The study did not find a significant relationship between the two groups of prescribers visa vis the variable in table 2

Discussion

In this study, it was found that the majority of participants where Clinical officers psychiatry. The evidence being that of the total 31 prescribers assessed 61.3% were COP and 38.7% were Psychiatrists. Of the Psychiatrist 50% where female and 50% where male. Of the 19 clinical Officer psychiatrist 15.8% where female and 84.2% where male. The proportional difference of the two groups of prescribers assessed was not statistically significant (P-value = 0.21). The results of this study are similar to another study by Jeff [10] who also reported a high proportion of mid-level prescribers who participated in their study as opposed to psychiatrists.

This study found that prescribers at Chainama hills hospital did not prescribe initial and target doses of antipsychotic drugs in concert with the NICE 2014 guidelines but were able to recommend the correct pharmacological class of antipsychotics. With regards to treatment, the prescribers (66.7% Psychiatrist and 52.6% COP) appropriately selected a second generation antipsychotic as their agent of choice. These agents are considered the first-line treatment of psychosis, though recent literature suggests a reconsideration of first generation antipsychotics as first-line agents for patients with first- episode schizophrenia Kahn*et al., (*2008), Sikich *et al., (*2010). However, the prescribers selected doses that were substantially higher (mean dose 4.3 Psychiatrists, 3.2 COP) than those recommended for patients with firs- episode psychosis [11].

This study found that prescribers did not recommend treatment durations as stipulated in the antipsychotic treatment guidelines for managing First-episode schizophrenia. This is evidenced from the fact that, once the patient's symptoms had remitted, less than half of the prescribers (33.3% Psychiatrist, 26.3% COP) recommended duration of treatment that was longer than one year.

These dosing considerations are important, given that patients with first-episode psychosis respond well to low antipsychotic doses [12,13], tend to have higher rates of side effects than those with chronic illness Merlo*et al.,* (2008) and are frequently non-adherent to treatment. Such non-adherence could certainly be exacerbated by side effects from high doses of antipsychotics.

With respect to duration of treatment, relapse rates of schizophrenia are very high with discontinuation of antipsychotics. Discontinuation of successful treatment after only months of stability is likely to lead to symptom re-emergence within 1 or 2 years Gitlin*et* [14].

The study further found that the psychiatrists performed better overall than the COP. The mean total score on the vignette questions

Table 2 Bivariate analysis of study variables with professional discipline

Variable	Psychiatrist		COP		P-value
	n	%	n	%	
Initial medication treatment					
Chlorpromazine	0	0.00%	3	15.8%	0.34
Clozapine	0	0.0%	1	5.3%	
Haloperidol	4	33.3%	3	15.8%	
Risperidone	8	66.7%	10	52.6%	
Sodium Valproate	0	0.0%	2	10.5%	
Recommended urine toxicology					
No	5	41.7%	13	68.4%	0.14
Yes	7	58.3%	6	31.6%	
Question 3 Initial dose correct					
No	5	41.7%	11	57.9%	0.38
Yes	7	58.3%	8	42.1%	
Question 3 target dose correct					
No	10	83.3%	17	89.5%	0.63
Yes	2	16.7%	2	10.5%	
Recommended 1 year treatment					
No	8	66.7%	14	73.7%	0.70
Yes	4	33.3%	5	26.3%	

Question 1 score				
mean, SD	3.2, 0.94	2.5, 1.01	0.09	
Question 3 score				
mean, SD	2.9, 0.71	2.5, 1.09	0.27	
Assessment Question (1&2)				
mean, SD	5.5, 2.94	3.8, 2.67	0.11	
Treatment Question (3&4)				
mean, SD	4.3, 2.27	3.7, 2.54	0.48	
Overall score				
mean, SD	9.8, 4.75	7.5, 4.84	0.19	

was 8.4 points ± 4.86 out of a possible 16 points. The minimum score was 1 and maximum 16 points. The respondents scored best (mean score 2.8 ± 1.02 out of 4 points) on the differential diagnosis question (1) and lowest (mean score of 1.2 ± 1.85) on the treatment duration question (4). The mean score on the assessment questions (questions 1 and 2) was slightly greater than the treatment questions (question 3 and 4) but not significantly different; mean score on the assessment questions was 4.5 ± 2.87 vs. 3.9 ± 2.42 on the treatment questions; t = 0.77; P-value = 0.45.

There were 48.4% respondents that prescribed the initial dose within guidelines for question 3, however, only 12.9% prescribed the target dose within guidelines. The mean score for question 2 was 1.7 ± 2.01 and the mean score for question 3 was 2.6 ± 0.97. However, even these specialized clinicians (Psychiatrists) had substantial gaps in their performance as most prescribed inappropriately high doses of antipsychotics, and more than one-third planned to discontinue anti- psychotic treatment prematurely. These results are consistent with the findings of a similar study conducted in Nigeria Adeponle [15].They reported that psychiatrists performed better that other prescribers with regards management of new onset psychosis but the group difference where not statistically different.

This exploratory study had several limitations. A major and important limitation is related to the ongoing uncertainty about several aspects of care for patients with first-episode psychosis. Evaluations of schizophrenia guidelines have shown a lack of consensus in many key areas, including what constitutes an ideal medical workup, the exact optimal duration of treatment and whether typical antipsychotics should be considered first-

line agents alongside atypical antipsychotics. Therefore, the results of this evaluation must be tempered by the fact that clear, widely accepted guidelines are either not available or conflicting in important areas of evaluation and management of firs-episode schizophrenia, and thus, it can be substantially difficult to assess clinical 'competence' in some domains.

Finally, though clinical case vignettes with systematic scoring of free-form responses to clinical questions appear to be a substantially improved method of adherence assessment, such vignettes may not precisely match respondents' behaviour in a given clinical encounter.

In conclusion, it appears that there may be important gaps in the assessment and treatment of patients with first-episode psychosis by clinicians owing to low levels of adherence to antipsychotic treatment recommendations. However, these results must be interpreted cautiously in the context of the ongoing debate and uncertainty about what constitutes optimal care for these patients.

Clinicians may not routinely and systematically perform important components of the medical workup for patients with new psychosis and for patients with first-episode schizophrenia, Prescribers may prescribe doses of antipsychotic medication that are too high and administered for an inadequate duration. If these practice gaps from this preliminary study are confirmed, additional education should be provided to front line Prescribers regarding the optimal workup and treatment of this vulnerable population.

Conflict of interest

None declared

Declaration of funding

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