MONITORING THE PATIENTS ON HIGH DOSE ANTIPSYCHOTIC MEDICATIONS, A STANDARD BASED CLINICAL AUDIT CYCLE

Mehboob Yaqub, Yasir Jassam, Grace Fergusson

ABSTRACT

Objective: To assess our current practice of physical health monitoring of patients on high dose antipsychotic medication against the nationally and locally accepted standard guidelines.

Design: A retrospective study of medication charts and case notes of the patients on high dose antipsychotic medication.

Place and duration of study: This clinical audit cycle was carried out at Argyll and Bute Hospital, Lochgilphead, Scotland. The clinical audit data was collected in first week of October 2007 while the data for re-audit was collected in the second week of January 2008.

Subjects and Method: Medication charts of all the patients in three wards were studied. 40 patients were on antipsychotic medication for treatment of psychotic illnesses, out of which 15 patients were on high dose antipsychotic medications. The extent of completion of their physical health monitoring was compared with the standards. The re-audit was done using the same method and number of patients on high dose antipsychotic medications was 20.

Results: Physical health monitoring was not up to date for any of the patients on high dose antipsychotic medication in the initial audit findings. This improved to 35% in the re-audit findings after interventions.

Conclusion: We found poor compliance with the standards for appropriate physical health monitoring of this group of patients. The interventions improved compliance but more improvement was required for which further interventions were planned.

Key words: Antipsychotic, High dose, Prescribing, Extra pyramidal side effects

INTRODUCTION

Antipsychotic medications are prescribed to treat psychotic illnesses both in the inpatient and outpatient set up as monotherapy or sometimes in combination. These medications in high doses have been used in a number of instances with intent to have a better clinical outcome despite limited supporting evidence[1] in this regard. This practice is known to have serious risks to physical health of patients including sudden death[2,3] which stresses the need for careful monitoring of the patients.

This audit was planned to look into all such prescriptions within our inpatient set up, which fall into the 'high dose' category. Clinical audits have previously been carried out to assess the prescribing practices related to high dose antipsychotic medications[4,5,6], but our audit specifically assesses physical monitoring of the patients because the former is unavoidably seen in a number of clinical situations[3,7]. This clinical audit also demonstrates a highly focussed full audit cycle and how this helped modify and improve our current practice.

Mehboob Yaqub, Specialty Doctor in Psychiatry, Halton General Hospital, Runcorn, 5 Boroughs partnership NHS foundation trust, United Kingdom
E-mail: mehboobyaqub@hotmail.com

Yasir Jassam, Foundation Programme trainee, FY2, Argyll and Bute hospital, Lochgilphead, Scotland

Grace Fergusson, Consultant Psychiatrist and Clinical Director of Argyll and Bute hospital, Lochgilphead, Scotland

Correspondence:

Dr. Mehboob Yaqub

SUBJECTS AND METHODS

There are clear guidelines available nationally and locally about monitoring of patients on high dose antipsychotic medications.

Standards (National)

National guidelines related to our clinical audit are from the *British National Formulary* (BNF) *and Consensus statement on high-dose antipsychotic medication by Royal College of Psychiatrists*[8] and are as follows:

- All patients being started on high dose antipsychotic medications should have a baseline record of the physical health and other risks which may be complicated by the use of high dose antipsychotic medications.

- Reasons for the high dose antipsychotic medications in each case should clearly be stated.
- All the patients on high dose antipsychotic medications should have renal functions (serum urea & electrolytes) and ECG (electrocardiogram) monitored every 3 months

Standards (Local)

The current local practice is a *high dose antipsychotic medication monitoring form* which is attached to the front of the case notes of the each of the patients on high dose antipsychotic medications (*Appendix 1*). This form was devised locally based on the above-mentioned national standards and it provides space for recording the U&Es (serum urea and electrolytes) findings, ECG findings, reasons for high dose prescription and Simpson and Angus score for extra pyramidal side effects[9].

The local guidelines therefore are to have an up to date monitoring form at the front of the case notes of all patients on high dose antipsychotic medications which ensures that the national guidelines are being followed.

High dose calculation

The maximum dose calculation was done according to the BNF recommendations using the *percentage method*[8]. According to this method, all the antipsychotic medications are calculated separately as percentage of their BNF maximum dose including the PRN (as required) medications and after adding them all up, the total percentage dose of maximum recommendation is calculated. Any dose more than 100% of BNF maximum is regarded as 'high dose'.

Regarding PRN medications, if they are prescribed at all, whether or not used frequently, they were included in the dose calculation according to the maximum possible doses the patients can get in any 24 hours, as the potential to receive high dose remains there, even if it is not on the regular basis[6,10].

For example if a patient is on Risperidone 8mg once daily (50% BNF maximum), Clozapine 225mg OD (25% BNF maximum) and PRN Haloperidol up to 15mg maximum per 24 hours (50% BNF maximum), these would make a total dose of 125% BNF maximum clearly putting the patient in the high dose, hence high risk category.

Sample

We collected the data from our acute admissions ward (general adult), rehabilitation ward and the psychiatric ICU (intensive care unit) in the first week of October 2007 as soon as the clinical audit was registered with the local Clinical Governance body. Prescription sheets of all the patients were studied and those falling into the category of 'high dose' were noted on our Audit Performa (audit tool). The case notes of all such patients on the high dose antipsychotic medications were checked to find out whether the high dose antipsychotic medication monitoring form was attached in the case notes, and if it was attached, whether it was up to date in terms of baseline assessment and 3 monthly reviews.

Table 1: Compliance of the current practice compared with the target compliance

Standard	Compliance	Target Compliance
Number of patients with monitoring forms available at all in case notes	10 (66.66%)	100%
Number of patients with monitoring entry forms filled in	01 (6.66%)	100%
Number of patients with up to date monitoring forms	NONE (zero %)	100%

RESULTS

There were 40 patients in three wards who were on antipsychotic medications. 15 patients were identified to be on antipsychotic medications in high doses. PRN antipsychotic medications accounted for 2 of these 15 patients to be categorised in the high dose group. Table 1 shows the compliance with the local guidelines.

Interventions

It is quite obvious from the results in the table 1 that the compliance with the standards in this audit was alarmingly poor and needed some urgent measures to improve the practice. Following interventions were suggested, agreed and later on carried out:

- The audit findings were presented to the colleagues in the internal academic program meeting, reminding them about the need to be up to date with our monitoring.
- The audit findings were emailed to all the colleagues who could not attend the presentation, requesting to be up to date as per guidelines
- To devise a system to flag up the clients on high dose antipsychotic medications, a 'check box' was added in the weekly printed MDT (multidisciplinary team) review sheets to remind clinicians of patients being on high dose antipsychotic medications on weekly basis so that the monitoring status could be checked regularly.
- Another email reminder was sent to all the colleagues mid way between the audit findings and time for re-audit.

Appendix 1

High Dose Antipsychotic Medication Monitoring Form

Patient's Name:	
Date of Birth:	**Age:**
Ward:	
Status:	

RISK FACTORS

	Tick if present	details
Age		
Obesity		
Heart Disease		
Other Medication		

CURRENT MEDICATION

	% BNF Max
1.	
2.	
3.	
TOTAL	
Date high dose commenced:	
Reason:	
Simpson & Angus Score (Max 40):	

1st REVIEW **DATE:**

Reason for High Dose:	
Simpson & Angus Score:	
U&Es:	
ECG:	
Informed consent:	

2nd REVIEW **DATE:**

Reason for High Dose:	
Simpson & Angus Score:	
U&Es:	
ECG:	
Informed consent:	

3rd REVIEW **DATE:**

Reason for High Dose:	
Simpson & Angus Score:	
U&Es:	
ECG:	
Informed consent:	

Appendix 2

High Dose Antipsychotic Medication Monitoring Form

Patient's Name:	
Date of Birth:	**CHI:** **Age:**
Ward:	**Status:**

CURRENT MEDICATION	**% BNF Max**
1.	
2.	
3.	
TOTAL	

Date high dose commenced

MONITORING REVIEW	**DATE:**
Weekly Temp, Pulse, BP	
Simpson & Angus Score (max 40)	
U+Es (date)	
ECG (date)	
Informed consent	

MONITORING (3 months from start)	
Weekly Temp, Pulse, BP	
Simpson & Angus Score (max 40)	
U+Es (date)	
ECG (date)	
Informed consent	

MONITORING (6 months from start)	
Weekly Temp, Pulse, BP	
Simpson & Angus Score (max 40)	
U+Es (date)	
ECG (date)	
Informed consent	

MONITORING (9 months from start)	
Weekly Temp, Pulse, BP	
Simpson & Angus Score (max 40)	
U+Es (date)	
ECG (date)	
Informed consent	

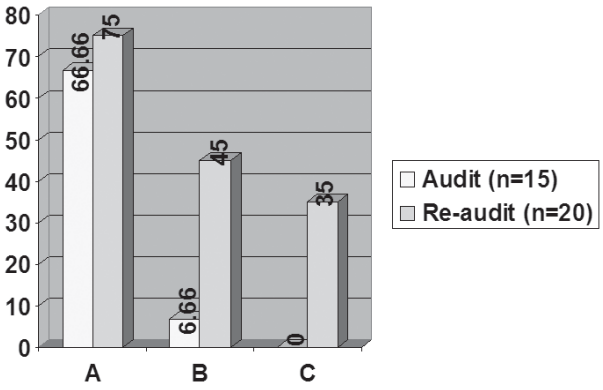

Chart 1: Comparison of the findings in audit and re-audit. A=%forms available on file, B=%entry forms filled in, C=%forms up to date n=number of patients on high dose antipsychotic medications. The values from the re-audit data (green coloured) clearly show improvement as a result of intervention

- Re-audit was done after 3 months of presentation of the results of the audit.

Re-audit

The re-audit was carried out in January 2008, using the same methodology as used in the earlier clinical audit. Number of patients identified to be on high dose antipsychotic medications was 20, out of which 4 patients had PRN medications bringing the total dose in to the high dose category. The results are displayed in chart 1 as comparison between the audit and re-audit results using compliance percentage.

Although the comparison chart shows some improvement in compliance (A=75%, B=45%, C=35%) with the standard, there was still a need for more improvement.

Problems encountered

- The monitoring form, originally in use, needed some corrections to make it clear when monitoring began and record the baseline findings at the start of high dose prescription. These necessary corrections were made after the re-audit (*appendix 2*).
- It was noticed that the addition of a 'check box' in the MDT review sheets had not proved to be of significant helpful to improve compliance, possibly because it was not being noticed at all on the review sheets. It meant that another more effective way of flagging up the high dose prescriptions was needed.

Further Interventions

- The findings were presented in the internal academic meeting to the colleagues so that further action could be agreed upon.

Appendix 3

Name: **D.O.B** **On high dose antipsychotic medication**			
Review due on	check	Review due on	check

- Colour coded stickers (*appendix 3*) were designed to stick on to the transparent folder for the drug charts displaying the 'due date' for the monitoring and investigations.
- It was agreed that the Clinical Pharmacist would be the best person to regularly check the up to date monitoring forms as junior doctors are rotated to different posts on regular basis, so there was need to hand over the monitoring activity to a professional likely to stay in the area for a long time to ensure continuity of clinical input.

Long term Interventions

Re-audits would be carried out every 6 months and would be led by the clinical pharmacist for the reason mentioned above.

Declaration of Interest

None.

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