

Evaluation of metabolic monitoring implementation for children and adolescents under second-generation antipsychotics (SGAs)

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Introduction

The prescribed use of second-generation antipsychotics (SGAs) for children and adolescents with mental disorders has increased by 114% from 2005 to 2009 in Canada, even though the number of children in Canada has decreased slightly over the same period of time¹. The increased use of SGAs has caused more metabolic complications such as: weight gain, hyperlipidemia, insulin resistance, and type 2 diabetes². In order to combat metabolic complications, the Canadian Alliance for Monitoring Effectiveness and Safety of Antipsychotics in Children (CAMESA) guideline group has proposed evidence-based recommendations². The objective of the study was to evaluate for the first time the rate of metabolic screening for children and adolescents under SGAs in Calgary. There has been no previous reported data available in Calgary regarding the screening.

Methods

A chart review was done for 57 active patients in Neuropsychiatry Services (NPS) of Alberta Health Services, Calgary, Canada.

NPS is a multi-disciplinary outpatient clinic that specializes in mental health and neurological disorders of children and adolescents. All the patients were under 19 years old. The data for drug use, height, weight, BP, BMI, waist circumference, HDL, LDL, fasting triglyceride, fasting total cholesterol, and fasting plasma glucose was recorded in the study (Tables 1.0 & 1.1). The data was only included if it was taken in NPS or if it was requested from any other services by a health care provider in NPS at least once.

Results

Out of the 57 patients in NPS, 22 patients were prescribed SGAs. The most common diagnosis in SGA-treated patients were attention deficit hyperactivity disorder (ADHD) (11.3%), extrapyramidal disorders (6.4%), and intellectual disabilities (6.4%). Patients treated with SGAs were more likely to go through metabolic monitoring than patients treated without SGAs. However, the rate of metabolic monitoring for both of the study groups was disappointing. Moreover, the real life clinical scenario might be gloomier than it seem. A patient might need to go through metabolic monitoring more than once depending on the frequency and length of use of SGA. For each specific screening category, a patient was considered to be monitored even if they were only monitored once.

Table 1.0: Summary of metabolic monitoring implementation

	Overall	Patients with SGAs	Patients without SGAs
# of patients	57	22	35
# of male	36	12	24
# of female	21	10	11
Mean age (yrs)	10.9	10.6	11.1
% Height monitoring	31.6	50.0	20.0
% Weight monitoring	36.8	50.0	28.6
% BP monitoring	26.3	45.5	14.3
%BMI monitoring	3.5	9.1	0.0
% Waist circumference	1.8	4.5	0.0
% HDL monitoring	8.8	22.7	0.0
% LDL monitoring	8.8	22.7	0.0
% Fasting triglyceride monitoring	8.8	22.7	0.0
% Fasting total cholesterol monitoring	8.8	22.7	0.0
% Fasting plasma glucose monitoring	10.5	22.7	2.9

Table 1.1: Percentage of Second-Generation Antipsychotics (SGAs) usage

Second Generation Antipsychotics (SGAs)	Usage (%)
Risperidone	50.0
Quetiapine	35.7
Aripiprazole	10.7
Olanzapine	3.6

Discussion and Conclusion

The low rate of metabolic screening for patients with SGAs suggest that even evidence-based national clinical practice recommendations such as CAMESA treatment recommendations cannot produce any tangible benefits unless they are implemented in the clinical setting. In an ideal world, all the patients should have their height, weight, and BP measured regularly by their physicians. The lack of physical examinations and lab results for patients treated with antipsychotics in NPS was indeed disappointing, yet there is hope. After the implementation of Metabolic Monitoring Training Program (MMTP) in Vancouver Coastal Health Child & Youth Mental Health Team, height measurement increased from 39% to 89%, fasting glucose measurement increased from 34% to 89%, lipid profile measurement increased from 32% to 89%, and SGA usage decreased by 56%³. The results from MMTP implementation has shown NPS and others that monitoring rate can be improved through proper implementation. Therefore, pediatric psychiatric patients in NPS with SGAs ought to go through more frequent and regular metabolic monitoring to reduce adverse side effects.

References

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