Improving the practice of metabolic monitoring in patients prescribed antipsychotic medication in a community mental health team

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Introduction

The relationship between a diagnosis of severe mental illness and excess mortality is well documented. Individuals with a severe mental illness die on average 15-20 years earlier than those without such a diagnosis (de Mooij *et al.*, 2019, Laursen *et al.*, 2014, Walker *et al.*, 2015, Hjorthøj *et al.*, 2017). There are a number of reasons for this, and they can be considered in terms of factors relating to lifestyle associated with severe mental illness, the illness itself, and the use of treatments that can increase the risk of cardiometabolic side effects. Patients with schizophrenia often have poor diets, sedentary lifestyles, and are cigarette smokers, all of which increase their mortality and morbidity (Brown *et al.*, 1999) (Callaghan *et al.*, 2014).

In addition, access to healthcare and engagement with services may be suboptimal in this population. The association between newer second generation antipsychotic medications and weight gain, which in turn raises the risk of dyslipidaemia, hyperglycaemia and metabolic syndrome, has also been demonstrated (del Campo *et al.*, 2018, Laursen *et al.*, 2012, Newcomer, 2005). It is now known that the diagnosis of schizophrenia itself is associated with an increased risk of developing metabolic syndrome (Mendelson, 2007). While the latter factor is a fixed risk factor, the others are modifiable and are appropriate targets for intervention to reduce some of this excess mortality. Identifying those at risk of developing metabolic syndrome relies upon adequate screening processes, which has traditionally been inconsistent in mental health services.

As per regulatory requirements, all patients on clozapine are already enrolled in a monitoring service, and metabolic screening occurs as a routine part of their care within this. Additionally, within the Coolock CMHT there is an established nurse-led Health Promotion clinic, which conducts metabolic screening as part of its remit for those patients prescribed depot antipsychotic medication. Established guidelines recommend at least yearly monitoring; currently metabolic monitoring is performed at six monthly intervals within this clinic.

Aims

- To determine the extent to which comprehensive metabolic screening is happening for all patients attending the CMHT who are prescribed antipsychotic medication
- To improve the quality and frequency of metabolic screening through the introduction of a referral pathway to increase the enrolment of patients on antipsychotic medication into the Health Promotion clinic

Methods

The Lester Positive Cardiometabolic Resource can be used to identify at risk patients and provides a useful overview of management of any abnormalities identified in monitoring. This was used as an audit standard when assessing whether comprehensive metabolic screening had been performed (Shiers *et al.*, 2014). All patients prescribed depot antipsychotic medication alone, or a combination of depot and oral antipsychotic medications, were already enrolled in the nurse-led clinic for metabolic screening. Consent for this audit was granted by the clinical director of the service.

The initial audit was conducted in June 2020. Based on the deficits in monitoring highlighted, a quality improvement plan was devised. This consisted of an information pack was provided to all new NCHDs upon joining the team. This pack contained relevant information about metabolic screening and highlighted a referral pathway to prompt clinicians to refer all patients on antipsychotics other than depot or clozapine to the Health Promotion clinic. The audit was then repeated in January 2022.

Methods

Monitoring Schedule	Baseline	Weekly (for initial 6 weeks)	12 weeks	Annually
Personal History	✓		✓	✓
Family History	✓		✓	✓
Lifestyle - Smoker - Diet - Exercise	✓		✓	✓
Weight - BMI - Weight gain	✓	✓	✓	✓
Waist Circumference	✓			✓
BP	✓		✓	✓
Diabetic risk - FPG - HbA1c	✓		✓	✓
Lipid profile	✓		✓	✓

Table 1: Adapted from the Positive Cardiometabolic resource, RCPsych

Pathway for referring patients initially to the Health Promotion clinic:	
Baseline parameters	• BMI , waist circumference , family history, personal history • Bloods - FBC, U+E, LFT's, Lipid profile(fasting), fasting plasma glucose • Cardiac Parameters: BP and ECG (GP) • Where possible, to be completed prior to commencing antipsychotic medication
GP	• Letter informing GP of new medication • referral to GP/ hospital for ECG
Email	• Email (*team CNS*) to enrol Patient in the metabolic screening pathway include Name, DOB, date medication was commenced
Review	• Arrange review appointment • Monitor and document side effects • Review baseline bloods if not already completed • Monitor and document weight

Figure 1: Adapted from NCHD information pack

Pathway for ongoing care of patients within the Health Promotion clinic:	
Baseline parameters reviewed	• Review bloods in collaboration with (*team CNS*) • Update family history once per year • Update personal history once per year
Diagnosis	• Identify if patient meets criteria for metabolic syndrome • Document in medical chart if patient is meets criteria for metabolic syndrome
Intervene	• Identify appropriate intervention using Lester Positive Cardiometabolic resource
Onward referral	• Referral letters to GP/ specialist services (endocrinology, cardiology etc) as appropriate

Figure 2: Adapted from NCHD information pack

Results

Metabolic screening rates were high for patients prescribed clozapine or depot antipsychotic. In the initial cycle only 54.7% of those prescribed antipsychotics other than depot or clozapine had metabolic screening, and only a quarter of those were within the recommended timeframe. Where metabolic screening was performed, it was comprehensive and lifestyle advice was provided to all. The repeat cycle showed a small increase in the proportion of those prescribed antipsychotics who had metabolic screening performed (55.4%), however the number of those done within the recommended timeframe doubled. Documentation of those who met criteria for metabolic syndrome was greatly improved also, making it easier to identify those at risk individuals and to intervene as per the Lester resource.

Results

Cycle 1	**Depot only (n = 8)**	**Depot plus oral antipsychotics only (n = 9)**	**Oral antipsychotics only (n = 53)**
Patients who had metabolic screening completed at all	8 (100%)	9 (100%)	29 (54.7%)
Patients who had metabolic screening completed within recommended timeframe	8 (100%)	9 (100%)	13 (24.5%)
Patients who met criteria for metabolic syndrome	3/8	3/9	12/53
Documented in medical notes	3/3 (100%)	3/3 (100%)	1/12 (8.3%)
Cycle 2	**Depot only (n = 6)**	**Depot plus oral antipsychotics only (n = 10)**	**Oral antipsychotics only (n = 56)**
Patients who had metabolic screening completed at all	6 (100%)	10 (100%)	31 (55.4%)
Patients who had metabolic screening completed within recommended timeframe	6 (100%)	10 (100%)	27 (48.2%)
Patients who met criteria for metabolic syndrome	2/6	3/10	17/31
Documented in medical notes	2/2 (100%)	3/3 (100%)	17/17 (100%)

Table 1: Results of audit cycle

Conclusions

Providing a clear pathway for accessing metabolic screening to all new NCHDs resulted in a greater proportion of patients having their screening done within the appropriate timeframes. Awareness of the issue also contributed to improved identification and documentation of metabolic syndrome. This enables clinicians to ensure prompt intervention and onward referral as appropriate. The overall numbers of patients being referred to the Health Promotion clinic was largely unchanged, and this is a priority for future development of this service. Further quality improvement plans may include implementing a weekly timeslot at the multidisciplinary team meeting for discussion and referral of patients commenced on antipsychotic medications to the Health Promotion clinic

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