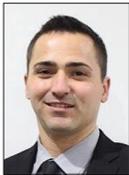


Nutrition in Severe Mental Illness: METABOLIC SIDE EFFECTS OF MEDICATIONS



SCOTT TEASDALE

Accredited Practising Dietitian
B. Nutrition and Dietetics
PhD

Accredited
Practising
Dietitian



THE EXPANDING LIFE EXPECTANCY GAP FOR PEOPLE WITH SEVERE MENTAL ILLNESS

People experiencing a severe mental illness (SMI) such as schizophrenia spectrum and other psychotic disorders are prone to a 'scandal of premature mortality', dying 15–25 years earlier than the general population, primarily due to preventable cardiometabolic disease¹. Due to a combination of illness characteristics and medication side effects, people with a SMI have rates of obesity and diabetes twice that of the rest of the population and hypercholesterolemia five times that of the rest of the population. Given that the life expectancy of people with SMI has not increased over the last few decades, it is clear they are not benefiting from advances in prevention and treatment².

METABOLIC EFFECTS OF PSYCHOTROPIC MEDICATIONS

First-generation (typical) antipsychotics are commonly associated with extrapyramidal side effects. Second-generation antipsychotic medications (SGAs) have a lower propensity for extrapyramidal side-effects, but an increased risk for adverse metabolic effects. People receiving SGAs commonly experience rapid weight gain, particularly in the first two years of treatment, during which time people gain on average twelve kilograms³. Weight gain continues following the initial two years, although at a slower rate. Much of this weight is distributed centrally, leading to central obesity and a cascade of metabolic issues such as dyslipidemia and impaired glucose tolerance. Some of the more metabolically potent medications have been shown to have direct metabolic effects such as impaired glucose tolerance independent of weight gain, which can be observed soon after commencing treatment.

A wide range of neuroreceptor and neuroendocrine factors regulate eating behaviour in people with SMI. Dopamine,

serotonin, muscarinic and histamine receptors have all been implicated in antipsychotic-induced weight gain, with medications with a high affinity for 5HT_{2c} and muscarinic receptors associated with the greatest risk. As the affinity to specific neuroreceptors differs between SGAs, the potential to cause weight gain, dyslipidemia and impaired glucose tolerance also varies. Some SGAs such as aripiprazole and ziprasidone are considered low risk for weight gain, while others such as olanzapine and clozapine are considered high risk⁴.

EFFECTS ON DIETARY INTAKE

People receiving antipsychotic medications commonly report insatiable hunger, which is a major contributor to weight gain. In addition, diet quality tends to be low, with people with SMI consuming large amounts of highly processed non-nutritive foods, and inadequate amounts of fruits and vegetables. This pattern of dietary intake may reflect deficits in the brain's reward system. Impairments in executive functioning and increased appetite can typically lead to behavioural disinhibition, unrestrained eating and ultimately excessive caloric intake and weight gain⁵. In addition, non-hungry food insecurity, social isolation, financial constraints and lack of access to adequate food preparation/storage facilities all play a role.

MANAGEMENT OF METABOLIC SIDE EFFECTS

Given the adverse effects of antipsychotic medications, frameworks have been developed for routine metabolic monitoring in people treated with antipsychotic medications. Further, positive cardiometabolic algorithms have been developed for both mental health teams, GPs and allied health clinicians, providing clinical guidelines on mindful prescribing of psychotropic medications, use of metformin in prevention

and treatment of metabolic abnormalities, and the utility of lifestyle interventions such as individualised nutrition and exercise interventions⁶.

CONCLUSION

A holistic package of care for people with SMI should include mindful prescribing of antipsychotic medications, regular monitoring of weight, waist circumference, blood pressure, lipids and glucose, consideration of metformin as a preventative measure, and intervention from specialist clinicians such as dietitians. Accredited Practising Dietitians are well placed to address weight gain and diet quality, while addressing other important issues such as constipation and medication-nutrient interactions for people with SMI⁷.

REFERENCES:

- 1 Thornicroft G (2011) Physical health disparities and mental illness: the scandal of premature mortality. *British Journal of Psychiatry* 199, 441–442.
- 2 Newcomer JW (2007) Antipsychotic medications: metabolic and cardiovascular risk. *The Journal of Clinical Psychiatry* 68, 8–13.
- 3 Alvarez-Jimenez M, González-Blanch C, Crespo-Facorro B et al. (2008) Antipsychotic-induced weight gain in chronic and first-episode psychotic disorders. *CNS Drugs* 22, 547–562.
- 4 De Hert M, Detraux J, Van Winkel R et al. (2012) Metabolic and cardiovascular adverse effects associated with antipsychotic drugs. *Nature Reviews Endocrinology* 8, 114–126.
- 5 Ferreira L, Belo A, Abreu-Lima C (2010) A case-control study of cardiovascular risk factors and cardiovascular risk among patients with schizophrenia in a country in the low cardiovascular risk region of Europe. *Revista Portuguesa de Cardiologia* 29, 1481–1493.
- 6 Curtis J, Newall HD, Samaras K (2012) The heart of the matter: cardiometabolic care in youth with psychosis. *Early Intervention in Psychiatry* 6, 347–353.
- 7 Teasdale SB, Ward PB, Rosenbaum S et al. (2016) Solving a weighty problem: A systematic review and meta-analysis of nutrition interventions in severe mental illness. *British Journal of Psychiatry* [epub ahead of print], doi: 10.1192/bjp.bp.115.177139.