Commentary

In recent years, metabolic syndrome (MS) has been identified as an important health risk in patients with schizophrenia and related disorders, and has often been related to the use of second-generation antipsychotics, particularly clozapine and olanzapine. MS, which is a constellation of cardiovascular risk factors including diabetes, hypertension, obesity, and dyslipidemia, is potentially reversible and may explain the higher incidence of cardiovascular disease in patients with serious mental illness.[1]

In 2005, McEvoy *et al*.[2] found that the age-adjusted prevalence of metabolic syndrome in patients with schizophrenia was 40.9%, based on the criteria from the third report of the National Cholesterol Education Program's Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) (NCEP ATP III).

Among the second generation antipsychotic drugs (SGA), olanzapine and clozapine are associated with excessive body weight gain, hyperglycemia, dyslipidemia and probably a pro-coagulant state.[2]

At present, it is not clear whether the metabolic syndrome has a single cause as it appears that it can be precipitated by multiple underlying risk factors. The most important of these underlying risk factors are abdominal obesity and insulin resistance.[3]

Several expert consensus guidelines have, therefore, called for routine monitoring of weight, lipids, and glucose for patients taking second-generation antipsychotics.[4]

Commonly used proxy or anthropometric measures such as body mass index (BMI), waist circumference (WC), waist-to-hip ratio (WHR), hip circumference, and waist-to-stature ratio (WSR) have been proposed to define obesity in epidemiological studies. In 2001, NCEP ATP III adopted waist circumference (WC) as the best surrogate for visceral adipose tissue (VAT). VAT as measured by WC has been shown to have a stronger association with cardiometabolic risk factors than general adiposity as measured by body mass index (BMI).[5]

However, WC cut-off values for detecting diabetes, other metabolic abnormalities, and cardiovascular disease (CVD) were proposed for different populations, with higher values for Europeans and lower values for Asians.[6] Comparability of findings within the same ethnicity, however, is limited, which may be due to variations in the age range of the study population and the statistical methods applied.

Moreover, the usefulness of anthropometric measures in predicting obesity-related metabolic side effects such as insulin resistance (IR) associated with antipsychotic agents in patients with schizophrenia is still uncertain. One study found that both BMI and WC significantly

predicted abnormalities in glucose homeostasis measured by a frequently sampled intravenous glucose tolerance test (FSIVGTT) in patients with schizophrenia taking olanzapine, risperidone, ziprasidone, or first-generation antipsychotics.[7]

This article has put forward a sincere effort to examine the relative importance of BMI and WC as markers of dyslipidemia and insulin resistance in schizophrenia patients stabilized on second generation antipsychotics in the Indian population.[8] Further studies would profit from examination of relevant neurobiological and pathophysiologic pathways involved in antipsychotic-induced weight gain, especially the role of individual genetic factors and drug-related pharmacogenetic factors as there is emerging evidence to suggest that there are individual differences between different SGAs with regard to cardiac and metabolic side effect profiles.

At present, we recommend monitoring VAT by measuring WC along with monitoring of fasting glucose, lipid levels, and blood pressure for patients with schizophrenia being treated with Olanzepine.

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