SGAs and the metabolic syndrome

Second-generation antipsychotics (SGAs) are an effective treatment for patients with schizophrenia but there is substantial evidence that certain of these agents are associated with clinically significant weight gain, increased risk for insulin resistance, hyperglycemia and dyslipidemia compared with first-generation antipsychotics.[1] Many of these conditions make up the metabolic syndrome and on the basis of the National Cholesterol Education Programme (NCEP) guidelines, any patient with three or more of the risk factors shown in Table 1 is considered to have the Metabolic Syndrome.[2] This syndrome together with physical inactivity and genetic factors, constitutes an important risk factor for cardiovascular disease and diabetes mellitus.[3]

Table 1: Clinical identification of the Metabolic Syndrome[2]

Abdominal obesity: waist circumference Men: >102cm Women: >88cm
Triglycerides Men and women: >1.7 mmol/L
HDL cholesterol Men: <1.03mmol/L Women: <1.29mmol/L
Blood pressure Men and women: ≥135/80 mmHg
Fasting glucose Men and women: >5.6mmol/L

There is a need to increase the awareness of metabolic and cardiovascular abnormalities in patients being treated with SGAs.[2] A critical review by Hennekens noted

- reductions in cholesterol of 10% can result in a 30% decrease in coronary heart disease
- a 4 to 6 mmHg reduction in blood pressure can effect a 15% decrease in coronary heart disease and
- maintenance of ideal body weight (BMI = 25) causes a 35 – 55% decrease in coronary heart disease.[3]

Thus, small incremental changes in key modifiable risk factors can significantly impact the risk for life-threatening diseases that are especially prevalent in the SGA using patient population.[2] In addition, choosing an SGA with a favorable metabolic risk profile is of considerable importance.

Findings in the literature consistently show that individual SGAs differ in their liability to induce weight gain or other metabolic effects with aripiprazole, amisulpride and ziprasidone having the lowest risk for clinically significant weight gain. The risk for dyslipidemia and type 2 diabetes mellitus has not been as extensively studied but aripiprazole, amisulpride and ziprasidone, once again, do not seem to affect blood glucose regulation or have a negative effect on serum lipid levels.[1]

On the basis of a number of publications, the most recently introduced SGA, aripiprazole, has shown limited or no effect on serum lipid levels and blood glucose regulation. Weight gain could be detected although the relative risk of weight gain compared to the other SGAs is low and is similar to that of ziprasidone; mean weight gain over a 1-year period is about 1 kg when pooling data of clinical trials with multiple doses of aripiprazole and a retrospective analysis of 5 short-term clinical trials showed that weight changes associated with aripiprazole do not appear to be dose dependent.[1]

The recent Institute of Medicine's report on Improving the Quality of Health Care for Mental and Substance-Use Conditions strongly recommends that both clinicians and administrators anticipate medical co-morbidities, treat appropriately and provide routine screening to deliver optimal care to patients using SGAs.[2]

References

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