

# A difficult dance: schizophrenia, atypical antipsychotics, and diabetes

Link between mental illness, blood glucose problems was first noted 80 years ago

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Even as early as the 1920s, it was recognized that patients with mental illness often develop insulin resistance and difficulty regulating blood glucose.<sup>1</sup> It is also known that individuals with schizophrenia are more prone to developing diabetes mellitus and 2–3 times more likely to die of cardiovascular disease than the general population.<sup>2,3</sup>

In the last decade, the newer atypical antipsychotics (olanzapine, clozapine, risperidone, and quetiapine) have become widely used in treating

schizophrenia and other mental illnesses. The literature has documented numerous reports of new-onset diabetes, worsening of diabetes, or diabetic ketoacidosis in patients taking atypical antipsychotics, and large epidemiological studies suggest a link between their use and the development of diabetes mellitus.<sup>2,3</sup> Those on atypical antipsychotics often gain weight and there also appears to be a correlation between abnormal lipid profiles and the weight gain associated with use of these drugs.<sup>2</sup> The

**TABLE 1 Screening and monitoring for diabetes and cardiovascular disease**

	Initial screening	Routinely monitor
Family history	×	
Age	×	
Ethnicity	×	
Previous hyperglycemia	×	
Previous cardiovascular events	×	
Height	×	
Weight	×	×
Body mass index	×	×
Blood pressure	×	×
Lipid profile	×	×
Fasting blood glucose	×	×
Other diabetogenic drug use	×	×

## Individuals with schizophrenia are more prone to developing diabetes mellitus and 2–3 times more likely to die of cardiovascular disease than the general population

mechanism by which atypical antipsychotics affect metabolic parameters is unknown. Several potential mechanisms have been suggested, including induced weight gain, insulin resistance, effects on leptin, and antagonism of dopamine and serotonin receptors.<sup>3</sup>

It has been difficult to prove a definite link between these drugs and the development of diabetes in a population that already has an increased incidence of diabetes mellitus, however, enough evidence exists to alert all practitioners to be vigilant for this potential problem.

No position statement or evidence-based clinical practice guidelines have yet been developed to guide practitioners in managing the metabolic problems that may be associated with the use of atypical antipsychotics. This is due to the lack of sufficient numbers of well-designed randomized trials; however, a recent consensus conference on antipsychotic drugs and obesity and diabetes was held to establish expert opinions on the monitoring of these patients and their treatment if they develop diabetes.<sup>2</sup>

### Screening and monitoring

In order to prevent serious health risks associated with diabetes (e.g., vision loss, renal failure, cardiovascular events, and non-traumatic amputation), the consensus conference recommends doing baseline screening for signs and symptoms of metabolic or cardiovascular changes (see Table 1). Weight gain should be monitored both by the patient and physician. The patient, family, friends, and health care professionals (including pharmacists) should be aware of the signs and symptoms of diabetes (i.e., polyuria, polydipsia, fatigue, nocturia, infections, hunger, blurred vision) and diabetic ketoacidosis (DKA) (i.e., rapid onset of polydipsia, polyuria, nausea, vomiting, dehydration, leg cramps, tachycardia, rapid breathing, confusion, coma) and ask about them routinely.<sup>2,4</sup>

Diabetes and schizophrenia are both serious medical conditions that require lifelong management. This may require collaboration between several health care professionals, family, friends, and the patient. Pharmacists can be members of both the diabetes and psychiatry teams to help detect signs and symptoms of previously undiagnosed diabetes, to help monitor patients taking atypical antipsychotic

### Knowledge into practice

Pharmacists can be important members of the health care management team caring for schizophrenic patients taking atypical antipsychotics. They should become knowledgeable about the potential metabolic side effects of atypical antipsychotics and the signs and symptoms of acute diabetes complications (i.e., hypoglycemia and DKA).

Pharmacists are in a position to:

- Educate their patients about the potential side effects of their antipsychotic agents
- Teach patients how and when to monitor blood glucose
- Counsel patients about hypoglycemia and its management
- Encourage in-store blood pressure monitoring for these patients
- Encourage healthy lifestyle options (e.g., healthy nutrition choices, physical activity, smoking cessation)
- Reinforce adherence with antipsychotic agent treatment
- Counsel patients about their diabetes medications
- Serve as a resource to psychiatric professionals about diabetes and to diabetes health care professionals about antipsychotic medications

agents, assist in optimizing diabetes management, and contribute to the patient's quality of life. ■

### References

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