

Monitoring for metabolic disorders

In patients taking antipsychotic drugs

This article is a brief overview of recommended monitoring for metabolic disorders and other adverse effects associated with taking antipsychotics. Much of this advice is based on previously published recommendations.^{1,2} It is only a guide and intended to raise awareness of the potential for metabolic disorders so that appropriate monitoring can be considered in patients at risk. Local policies and practices should be referred to if available.

- Patients with serious mental illness including schizophrenia have increased rates of metabolic disturbances such as obesity, diabetes, and dyslipidaemia and are at increased risk of medical illness particularly cardiovascular disease
- Treatment with antipsychotic drugs can cause or aggravate these disorders
- Both conventional (e.g. chlorpromazine, haloperidol) and atypical drugs (clozapine, olanzapine, risperidone and quetiapine) have been implicated, but the risk varies between agents
- GPs are an integral part of a multidisciplinary team involved in monitoring for metabolic disorders and the management of risk factors and lifestyle

Summary Table: Routine metabolic monitoring for people on antipsychotics

Parameter	Baseline	Monthly	3-monthly	Annually
Weight/BMI	√	√		
Fasting glucose	√	People at risk for 3 months	People at risk for one year, once for others	√
Lipids	√		For one year for people on atypical antipsychotics	√

Weight gain

Weight gain is one of the main reasons for non-adherence to antipsychotics.

Weight gain is more significant with atypical agents but can also occur with conventional drugs particularly phenothiazines (chlorpromazine and trifluoperazine). Generally olanzapine and clozapine cause more weight gain than risperidone or quetiapine.³ Weight management and advice should commence when the drug is started because once weight is gained it is difficult to lose.

Monitoring recommendations

- Measure baseline weight and monthly weights for all patients prescribed atypical antipsychotics or phenothiazines including depot preparations.
- Offer dietary management for obese people (BMI > 30) or those gaining significant weight ($\geq 7\%$) during treatment.

Lipids

Antipsychotics are commonly associated with dyslipidaemia.

Patients on antipsychotics frequently have a metabolic dyslipidaemia with elevations of triglycerides and reduced HDL along with features associated with the metabolic syndrome.⁴ Increases in LDL have also been reported.³ Lipid abnormalities may not be associated with weight gain. Phenothiazines, clozapine and olanzapine cause the most significant increase in triglycerides.

Monitoring recommendations

- Baseline fasting triglycerides and total cholesterol with any antipsychotic repeated three monthly with atypical agents for the first year of treatment.
- A full lipid profile performed annually as part of routine health monitoring with any antipsychotic.

Glucose

People with schizophrenia and bipolar disorder have a greater risk of developing diabetes than the general population.

Lifestyle issues associated with severe mental illness and antipsychotics are probably both contributing factors.

Clozapine and olanzapine are associated with the greatest increase in blood glucose and the risk of diabetes with risperidone and quetiapine appears to be relatively low. Hyperglycemia due to clozapine or olanzapine is not usually dose dependent. It occurs between 10 days to 18 months after starting the drug and is reversible on stopping.

Monitoring recommendations

- Consider screening all patients with schizophrenia for diabetes particularly those with risk factors for developing diabetes and those on higher risk drugs (clozapine and olanzapine). Educate those identified to be at risk about the symptoms of diabetes.
- In all patients measure baseline, at three months, and then annual fasting glucose. Repeat this pattern if the drug is changed. The frequency of monitoring may be increased if there are changes in fasting glucose or if risk factors change.
- In patients at high risk of developing diabetes consider monthly fasting blood glucose for the first three months and then check blood glucose three monthly for the first year followed by annually thereafter.

If diabetes develops switching to a less diabetogenic drug (risperidone, quetiapine, haloperidol) may be considered if clinically appropriate.

References

1. Gupta J. Monitoring parameters for atypical antipsychotics – a review of the evidence. Chelsea and Westminster Hospital, Central and NW London Mental Health NHS Trust, UK, 2003. Available from; <http://snipurl.com/14z6i>
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4. Cohn T, et al. Characterizing coronary heart disease in chronic schizophrenia; high prevalence of the metabolic syndrome. *Can J Psychiatry* 2004;49:753-60.