

## **Monitoring Atypical Antipsychotic Medication**

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There has been a significant increase in the use of second generation (atypical) antipsychotic agents such as risperidone (Risperdal), olanzapine (Zyprexa), quetiapine (Seroquel), ziprasidone (Geodon) and aripiprazole (Abilify) to treat pediatric mental illness. These disorders include bipolar disorder, pervasive developmental delay, and schizophrenia. However, these medications are most often prescribed for children with affective and behavioral disorders and not psychotic disorders. One study in children found that 43.4 percent of patients had a mood disorder; 27.9 percent had aggressive/disruptive behavioral problems, and 28.9 percent of children on these medications had schizophrenia-like disorders (Correll 2004). These agents can also be used as an augmentation therapy of SSRI's for OCD, severe anxiety, and eating disorders. These medications can be very effective for stabilizing the mood and reducing aggressive/emotional outbursts. The Food and Drug Administration (FDA) has recently approved these agents for some of these problems in children and adolescents.

Ordinarily, patients who need to be treated with these medications have psychiatric disorders that are relatively complex and severe, and consequently they should be seen on a regular basis by a specialist. However, we understand that there may be circumstances in which it is necessary or appropriate for a primary care provider to treat patients with these medications and/or to collaborate with a specialist in monitoring their effects. We do, however, strongly encourage primary care doctors to ensure that patients treated with these medications have regular child and adolescent psychiatry follow-up care. It is our hope in writing these guidelines that primary care providers will feel more prepared to monitor the treatment of patients on these agents when it is necessary to ensure that patients receive needed medication or when the primary care physician chooses to monitor the physical effects of the agents in collaboration with a specialist.

While these medications can be very helpful, they are not without risk.

Potential side effects of these agents include: movement disorders, certain hormonal changes, and the risk of metabolic syndrome. Common side effects include sedation with initiation of medication, weight gain, dry mouth, constipation, increased saliva production, and photosensitivity. Other side effects include:

1. Acute Dystonic reactions can happen within three to five days of starting the medication and can include acute and sustained contractions of muscles of neck (torticollis), eyes (oculogyric crisis), tongue, jaw, and other muscle groups. Dystonias are often painful and frightening for the patient. If this reaction occurs, stop medication, call the specialist (if unavailable, call MCPAP), use benedryl 25mg, and if the reaction does not resolve, proceed to a hospital Emergency Department.
2. Tardive dyskinesia is an involuntary movement disorder involving the tongue, mouth, fingers, toes, and other body parts. They occur less often with these newer agents and usually occur when on these agents for a prolonged time. If this is evident in an examination, call the specialist (if unavailable, call MCPAP) for direction on care.
3. Akathesia is characterized by increased restlessness, pacing and agitation, and difficulty sitting. It is uncomfortable for the patient and associated with noncompliance and feelings of hopelessness

and suicidal ideation. If this is evident in the examination, consider prescribing lorazepam or clonazepam 0.25mg -1mg, and call the specialist (if unavailable, call MCPAP) for help in managing.

4. Neuroleptic Malignant Syndrome is a rare but dangerous reaction characterized by muscle rigidity, fever, altered mental status, and fluctuation in cardiovascular status. Proceed to the emergency room immediately.
5. Cardiovascular side effects can include orthostatic hypotension, which may lead to dizziness, falls, and injury. Patients should be instructed to get up slowly from recumbent positions and hydrate well. This is more common with Seroquel or when these medications are given in combinations with clonidine or guanfacine (Tenex or Intuniv).
6. QT dispersion is also associated with these agents. In particular, Geodon has been found to increase the QT interval. If observed, call the specialist (if unavailable, call MCPAP to discuss how to proceed).
7. Metabolic and endocrine side effects of these agents have become of major concern in recent years (Newcomer, 2005). Increased prolactin serum levels have also been seen with these newer agents, especially with risperidone. The possible long-term repercussions on bone density and sexual function remain uncertain (Findling, et al., 2005). Hyperprolactinemia associated with these agents may be more prevalent in children and adolescents than in adults because the density of D2 dopamine receptors in the central nervous system is higher in youth than adults (Roke, et al., 2009).

Weight gain and hyperglycemia, and dyslipidemia, including hypercholesterolemia and hyperglyceridemia, are also of concern. All of these metabolic changes imply a higher risk of cardiovascular morbidity and mortality in adult life (Laita et al, 2007). Abdominal obesity may be a better predictor than overall obesity for the risk of cardiovascular disease and Type 2 diabetes. Waist circumference and waist-height ratios are simple, yet effective, surrogate measures of abdominal obesity (Li, et al., 2006). In light of these potential side effects, we recommend the following:

Before initiating treatment, complete a physical examination and medical history, and obtain a careful history of any metabolic disorders and/or diabetes, as second generation antipsychotics are associated with weight gain, which can exacerbate risk for metabolic disorder. Obtain baseline weight and body mass index along with waist circumference and waist-height ratios. Obtain baseline laboratory values that include CBC/diff, LFTs, Chem 7, TSH, cholesterol and lipid profiles, and fasting blood sugar. Complete a baseline Abnormal Involuntary Movement Disorder (AIMS) examination. AIMS is a neurological examination used to evaluate the presence or development of movement disorders described above. More information about this process can be found at:

<http://www.youtube.com/watch?v=nCfUsIPaLCs>

<http://www.mhsip.org/library/pdfFiles/abnormalinvoluntarymovementscale.pdf>

### **Overall Monitoring Recommendations**

Follow weight, waist-to-height circumference, body mass index, and vitals at every visit. Complete an AIMS examination at every other visit. Laboratory values including lipid profile, fasting blood glucose,

transaminases, and complete blood counts should be repeated every three to four months. A helpful guideline is available at the following link:

<http://www.idf.org/node/1405?unode=4A7F23CB-FA35-4471-BB06-0294AD33F2FC>

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