

December 4, 2006

<<Name>>
<<Address1>>
<<Address2>>
<<City, State Zip>>

Dear Doctor:

Your patient, <<Patient Name>>, has been identified from claims data to be utilizing an atypical antipsychotic medication with a subsequent diabetes mellitus diagnosis. The following information is provided to you to assist you in the care of your patient.

ETIOLOGY AND INCIDENCE

The mechanism of how atypical neuroleptics decrease glucose tolerance and lead to type II diabetes is not understood. There are four theories that can be found in the literature. They are as follows:

1. Atypical neuroleptics directly damage pancreatic β -cells.¹
2. Atypical neuroleptics may block glucose accumulation directly at the level of the glucose transporter (GLUT) protein in cells derived from both peripheral and brain tissue.²
3. Atypical neuroleptics antagonize 5-HT_{1A} and 5-HT_{2A/C} receptors resulting in depressed responses in pancreatic β -cells leading to elevated serum glucose.³
4. Atypical neuroleptics have been shown to increase serum prolactin. One study reported that an insulin-resistant state was induced in patients with hyperprolactinemia.⁴

There is some research comparing some of the atypical neuroleptics (antipsychotics) to each other. Only the older drugs in this class (clozapine, olanzapine, risperidone) were found in the comparisons. One study by Gianfrancesco et.al. compared clozapine, olanzapine, and risperidone by looking at claims data for 2.5 million psychosis patients within health plans.⁵ Only risperidone was not associated with an increased risk of type II diabetes. A study comparing risperidone with olanzapine by Fuller, et.a. showed that olanzapine was associated with a 37% (hazard ration 1.37) increased risk of developing diabetes compared with risperidone.⁶ Quetiapine (Seroquel) has recently also been associated with an increased risk of type II diabetes. All of these agents can also be associated with metabolic syndrome and hyperlipidemia which present additional management challenges.


The American Diabetes Association guidelines for treatment can be viewed and downloaded at <http://www.diabetes.org/for-health-professionals-and-scientists/cpr.jsp>.

If the patient could benefit from consultation with a certified diabetes educator that list is available at <http://www.diabeteseducator.org>

A list of diabetes education programs recognized by the ADA is available at <http://www.diabetes.org/education/eduprogram.asp>.

Case management and/or consultative services are available from APS (888-545-1710) to assist in the care of this patient. Thank you for your consideration. Please do not hesitate to contact the Wyoming DUR Program or the Department of Health if you have comments, concerns or questions.

Sincerely,



Debra Devereaux, R.Ph., MBA
WY-DUR Consultant

References:

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2. Ardizzone TD, et.al. Inhibition of glucose transport in PC12 cells by the atypical antipsychotic drugs risperidone and clozapine, and structural analogs of clozapine. Brain res 2001;923:82-90.
3. Wirshing DA. Novel antipsychotics and new onset diabetes. Biol psychiatry 1998 Oct 15;44(8):778-83. Cited In: Bechara CI, et.al. Dramatic worsening of type 2 diabetes mellitus due to olanzapine after 3 years of therapy. Pharmacotherapy 2001 Nov 11;21:1444-47.
4. Foss MC, et.al. Peripheral glucose metabolism in human hyperprolactinemia. Clin endocrinol (Oxf). 1995 Dec;43(6):721-6. Cited In: Bechara CI, et.al. Dramatic worsening of type 2 diabetes mellitus due to olanzapine after 3 years of therapy. Pharmacotherapy 2001 Nov 11;21:1444-47.
5. Gianfrancesco FD, et.al. Differential effects of risperidone, olanzapine, clozapine, and conventional antipsychotics on type 2 diabetes: findings from a large health plan database. J clin psychiatry 2002;63:920-30.
6. Fuller M, et.al. Comparative study of the development of diabetes mellitus in patients taking risperidone and olanzapine. Pharmacotherapy 2003;23(8):1037-1043.