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ATYPICAL ANTIPSYCHOTICS: CAUSING CRAZINESS IN GLUCOSE REGULATION?

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Introduction: Hyperglycemia and type 2 diabetes mellitus are more common in schizophrenia than in the general population. Presence of type 2 diabetes would limit the use of many atypical antipsychotics and also as a major risk factor for cardiovascular disease, therefore it is important that the role atypical antipsychotics play in this glucose dysregulation is ascertained.

Objectives: To analyse current experimental literature on anti-psychotic dysregulation of glucose metabolism; reviewing clinical evidence already available.

Methods: *PubMed* - searched with MeSH term “anti-psychotics”, with additional terms; "schizophrenia", "diabetes", "glucose", "treatment"

Results: The central effects of atypical anti-psychotics that may induce a metabolic dysregulation are mediated by neurotransmitter receptor antagonism, particularly the histamine-1 and serotonin-2C receptors. In the periphery, many of the mechanisms postulated are dependent on weight gain and serum fatty acid level. Resistance to anorexigenic endocrine factors and elevated levels of the orexigenic agents adiponectin and ghrelin, may also be induced by certain anti-psychotics. Anti-psychotics could play a role in accelerating an existing insulin resistance as current literature suggests an existing CSF glucose metabolism dysregulation in anti-psychotic drug naïve patients. Deficits have also been implicated in schizophrenia pathogenesis, raising the possibility of co-morbidity.

Conclusion: The clinical implications of this phenomenon are significant and until anti-psychotics are developed, that minimises this metabolic disturbance, precautions should be taken. Dietary counselling, and administration of anti-diabetic drugs such as Metformin may aid the reduction in insulin resistance while switching to more appriopriate anti-psychotics has been shown to be beneficial.

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