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Metformin for treatment of antipsychotic-induced weight gain in a South Asian population with schizophrenia or schizoaffective disorder: A double blind, randomized, placebo controlled study

Varuni A de Silva¹, Madhubhashinee Dayabandara¹, Hiranya Wijesundara², Thushani Henegama², Heshan Gunewardena², Chathurie Suraweera² and Raveen Hanwella¹

Abstract

Background: Antipsychotic-induced weight gain causes serious health problems. We investigated the efficacy and safety of metformin in treating antipsychotic-induced weight gain in South Asian patients.

Methods: Sixty six adult patients with schizophrenia or schizoaffective disorder treated, with atypical antipsychotics, and who had increased by more than 10% their pre treatment body weight, were randomly assigned to receive metformin or placebo in a double-blind study. Patients received usual treatment and metformin 500mg or placebo twice daily for 24 weeks. The primary outcome measure was change in body weight from baseline to week 24. Linear mixed models were used in the analysis.

Results: Mean change in body weight in the metformin group was -1.56 kg (95% CI= -3.06 to -0.05) and 1.0 kg (95% CI= 0.03 – 1.97) in the placebo group. Between-group difference was 2.56 kg. At 24 weeks the between-group difference showed significant time-by-treatment interaction ($F=3.23$, $p=0.004$). Between-group difference in BMI showed significant time-by-treatment interaction ($F=3.41$ $p=0.03$). There was no significant difference in waist-hip ratio or fasting blood sugar.

Conclusions: Metformin is effective in reducing weight in South Asian patients with schizophrenia or schizoaffective disorder who had increased their body by more than 10% after treatment with atypical antipsychotics.

Keywords

Schizophrenia, metformin, weight gain, antipsychotics, Sri Lanka

Introduction

All-cause mortality among people with schizophrenia is higher than in the general population because of increased deaths due to suicide, injury, circulatory disease and other physical illness such as carcinomas. (Correll et al., 2015) The main contributor to increased mortality is coronary heart disease (Hennekens et al., 2005; Kredentser et al., 2014). Unhealthy life style, disparities in access to health care, smoking and poor compliance with medical treatment and metabolic side effects of antipsychotic treatment all contribute to this increased morbidity and mortality. (Hennekens et al., 2005). Physical activity is associated with 20%–30% reduction in risk of coronary heart disease (Sattelmair, 2011). People with schizophrenia engage in less physical activity, and this is thus an important contributor to increased cardiovascular mortality (Vancampfort, 2012)

Cardiovascular disease is a major cause of mortality and morbidity in South Asia, and rates have increased in the recent past (Murray and Lopez, 1996). A higher prevalence of metabolic syndrome, diabetes, insulin resistance central obesity and dyslipidemias and sedentary lifestyles are thought to contribute to this increased risk among South Asians (Bedi et al., 2006).

Obesity increases the risk of metabolic syndrome and type 2 diabetes mellitus. The World Health Organization (WHO) Expert Consultation concluded that the proportion of Asian people with a high risk of type 2 diabetes and cardiovascular disease is substantial at BMIs lower than the existing WHO cut-off point for overweight (25 kg/m²) (WHO, 2004).

Antipsychotics are associated with increased risk of weight gain, diabetes, dyslipidaemia and metabolic syndrome. Weight gain leads to poor drug compliance, reduced quality of life and low self esteem. All antipsychotics are known cause weight gain,

¹Department of Psychological Medicine, Faculty of Medicine, University of Colombo, Colombo, Sri Lanka

²Senior Registrar in Psychiatry, University Psychiatry Unit, National Hospital of Sri Lanka, Colombo, Sri Lanka

Corresponding author:

Varuni A de Silva, Department of Psychological Medicine, Faculty of Medicine, University of Colombo, Kynsey Road, Colombo, 08, Sri Lanka.
Email: varunidesilva2@yahoo.co.uk