Srp Arh Celok Lek. 2015 Nov-Dec;143(11-12):712-718
ОРИГИНАЛНИ РАД / ORIGINAL ARTICLE
DOI: 10.2298/SARH1512712P
UDC: 615.214.2.065 : 616-008.9

Long-Term Treatment with Olanzapine in Hospital Conditions: Prevalence and Predictors of the Metabolic Syndrome

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SUMMARY

Introduction The risk of metabolic abnormalities is greatly increased in schizophrenic patients started on an atypical antipsychotic medication. Patients with psychiatric disorders exceed mortality ranges resulting from, among others, increased risk of cardiovascular events. Other factors contributing to the development of metabolic syndrome include prolonged duration of illness, increasing age, female sex and lifestyle factors.

Objective This cross-sectional study was taken up to assess the prevalence of the metabolic syndrome (MetS) in schizophrenic patients receiving olanzapine monotherapy for at least six months and to determine the most important risk factors associated with metabolic syndrome presence in these patients.

Methods A total of 93 long term hospitalized schizophrenic patients (71 men, 22 women), had a screening of the following: case-history data, psychiatric scales, anthropometric measures, blood (fasting glucose, lipid status, C-reactive protein – CRP) and urine samples (microalbuminuria).

Results Prevalence of MetS according to International Diabetes Federation criteria in our study was 34.4%. The multivariate analysis distinguished the following significant predictors of MetS presence (in order of appearance): data about diabetes mellitus in family history (p=0.002), body mass index >25 kg/m^2 (p=0.002), hyperlipidemia in family history (p=0.008), and elevated CRP value (p=0.042).

Conclusion High rate of MetS in patients treated with olanzapine in this study exceeds MetS prevalence in general population. Among observed parameters, our study pointed to several "high risk" predictors associated with MetS presence. Regular monitoring of cardiometabolic risk factors is highly recommended. Positive heredity distress mentioned above may direct a psychiatrist to prescribe some other drug than olanzapine in the long term treatment of schizophrenia.

Keywords: metabolic syndrome; schizophrenia; olanzapine

INTRODUCTION

Schizophrenia is a chronic and debilitating psychiatric illness with a worldwide prevalence of approximately 1% [1]. It is characterized by positive, negative and affective symptoms. Since the introduction of chlorpromazine in 1952, antipsychotic drugs are the mainstay of the pharmacologic treatment of psychosis and schizophrenia [2]. By blocking dopaminergic neurotransmission in subcortical areas, antipsychotics are capable of producing extrapyramidal side-effects. This propensity is more pronounced with the first-generation antipsychotics (FGA), than with the second-generation antipsychotics (SGA). Thus, during the past two decades, SGA replaced FGA as the standard treatments for schizophrenia [3]. SGA's antagonism to histamine H_1 and serotonin $5HT_{2c}$ receptors, associated with weight gain and metabolic deregulation, enhance the prevalence of the metabolic syndrome (MetS) in patients taking this kind of medication [4]. Factors that also contribute to the development of MetS are long-term duration of illness, old age, female sex, lifestyle factors related to psychotic disorder [5]. Patients suffering from psychiatric disorders have significantly increased morbidity and mortality ranges – increased risk of cardiovascular events and premature death is estimated to 10 to 25 years earlier than in general population [6]. Data in literature indicate that treatment-induced metabolic abnormalities, such as raised lipids and glucose blood levels, eventually result in abdominal obesity, may contribute to the development of diabetes mellitus type 2 and arterial hypertension, and may account for up to 60% of premature deaths of persons with serious mental illness [7].

International Diabetes Federation (IDF) criteria are the most widely used in European studies (Table 1). Definition of MetS includes an assembly of disorders such as the abdominal obesity, hypercholesterolemia, hyperlipidemia, arterial hypertension and raised blood glucose levels [8].

In comparison to general population, the prevalence of MetS is increased in patients taking psychotropic agents [9, 10]. This applies not only to antipsychotics, but also to mood stabilizers and antidepressants [11, 12]. Apart from that, subjects with schizophrenia or bi-

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