



Contents lists available at ScienceDirect

Diabetes & Metabolic Syndrome: Clinical Research & Reviews

journal homepage: www.elsevier.com/locate/dsx

Original Article

A two fold risk of metabolic syndrome in a sample of patients with schizophrenia: Do consanguinity and family history increase risk?



Abdulbari Bener^{1,2,3,*}, Abdulla O.A.A. Al-Hamaq⁴, Elnour E. Dafeeah⁵

¹ Department of Medical Statistics & Epidemiology, Hamad Medical Corporation, Doha, Qatar

² Department of Public Health, Weill Cornell Medical College, Doha, Qatar

³ Department of Evidence for Population Health Unit, School of Epidemiology and Health Sciences, University of Manchester, Manchester, UK

⁴ Qatar Diabetic Associations and Qatar Foundation, Doha, Qatar

⁵ Department of Psychiatry, Psychology Unit, Rumailah Hospital, Hamad Medical Corporation, Doha, Qatar

ARTICLE INFO

Keywords:

Diabetes mellitus
Obesity
Metabolic syndrome
Schizophrenia
Prevalence
Qatar

ABSTRACT

Background: Patients with schizophrenia are at greater risk for metabolic syndrome (MetS) and other cardiovascular risk factors.

Objective: The objective of the study was to examine the prevalence of metabolic syndrome (MetS) and its criteria among patients with schizophrenia (Sz) according to the revised criteria of NCEP ATP III and assess which component contributed to the increased risk of the MetS in schizophrenia patients.

Design: This was a matched case-control study.

Setting: Outpatient clinics of the Psychiatry department and Primary Health Care (PHC) Centers of the Supreme Council of Health, State of Qatar.

Subjects and methods: The study was carried out among patients with schizophrenia (SZ) and healthy subjects above 20 years old. The study based on matched by age and gender of 233 cases and 466 controls. The survey was conducted from June 2010 to May 2011. Face to face interviews were conducted using a structured questionnaire followed by laboratory tests. Metabolic syndrome was defined using the National Cholesterol Education Program – Third Adult Treatment Panel (ATP III).

Results: The prevalence of metabolic syndrome among schizophrenic patients (36.5%) were significantly higher than healthy subjects (18.7%) ($p < 0.001$). The prevalence of MetS in schizophrenic subjects was reported to be two times higher than in the general population. The MetS components were higher among schizophrenic patients than healthy subjects. Among the components of MetS, central obesity (63.9%) was the most common criteria among patients compared to healthy subjects (45.7%) ($p < 0.001$). Schizophrenic patients (27%) were significantly obese than the healthy subjects (13.1%). Female schizophrenia patients were more likely to have three or more metabolic abnormalities compared to men.

Conclusion: The study indicated that metabolic syndrome was highly prevalent in patients with schizophrenia. The female gender was significantly associated with a higher prevalence of metabolic syndrome. The identification and clinical management of this high risk group is of great importance.

© 2013 Diabetes India. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Metabolic syndrome and cardiovascular risk factors are highly prevalent in people with schizophrenia. Schizophrenia patients have been reported to have excess mortality and shorter life expectancy [1]. People with schizophrenia tend to have a shorter

life expectancy than the general population, not only due to high suicide rate, but most of the risk is due to cardiovascular events. Cardiovascular morbidity and mortality have been found to be increased in patients with schizophrenia compared to the general population [2]. The prevalence of diabetes mellitus is rising globally and it is estimated to be around 200 million people which is more than 5% of the adult population [3]. People with Sz on average have a lifestyle which increases their risk for the development of MetS: sedentary life style, lack of regular physical activity, poor food intake, substance use and high rate of smoking [4]. The metabolic abnormalities have an impact not only on physical health, but also on a lower functional outcome, poorer quality of life and non-compliance.

* Corresponding author at: Department of Medical Statistics & Epidemiology, Hamad Medical Corporation and Department of Public Health, Weill Cornell Medical College, PO Box 3050, Doha, Qatar. Tel.: +974 4439 3765; fax: +974 439 3769; mobile: +974 5522 1516.

E-mail addresses: abener@hmc.org.qa, abb2007@qatar-med.cornell.edu (A. Bener).

The metabolic syndrome (MetS) is characterized by the combination of several clinical features, including central obesity, high blood pressure, elevated concentrations of fasting glucose and triglyceride, low concentration of high density lipoprotein (HDL cholesterol) and insulin resistance [5]. Several components of the metabolic syndrome have been found to be rather common in patients with Sz, and some components have also been linked to antipsychotic drug treatment [6]. Insulin resistance and central obesity have been acknowledged as important causative factors for metabolic syndrome, but its exact mechanism has not been clarified. Patients with schizophrenia are at risk for developing obesity due to many factors including inactive life style, poor dietary choices and side effects of psychotropic medications.

Though the concept of MetS is universally accepted, there is still controversy on the exact pathophysiology resulting in differing definition, e.g. by the American Heart Association [7], the National Cholesterol Education Program [8] and the International Diabetes Federation/WHO [9]. The most commonly used definition for MetS is the National Cholesterol Education Program Adult Treatment Panel (NCEP ATP III). In our study sample, we have used ATP III to examine the prevalence of MetS in a group of patients with schizophrenia in Qatar and the features of the MetS were compared with those of the general population.

The prevalence of MetS is higher in psychiatric populations compared to the general population. A high prevalence of metabolic syndrome would have substantial implications for both health and health care in this population. Two previous studies [10,11] of Bener et al. have reported the high prevalence of schizophrenia and metabolic syndrome in general population of Qatar. But there are no studies on the prevalence of MetS among patients with schizophrenia. Further, several studies have evaluated prevalence of MetS in patients with Sz [4–7]. Therefore, the authors had a growing interest in MetS among patients with schizophrenia. In this background, the present study aimed at investigating the prevalence and clinical correlates of MetS in a group of patients with schizophrenia and compared with those of the general population.

2. Subjects and methods

This is a case-control study which was designed to determine the prevalence of metabolic syndrome and its individual components among schizophrenia patients, then compared with general population. The survey was conducted over a period from June 2010 to May 2011. This current study is based on the 233 cases and matched with age and gender of 466 control subjects.

The study was approved by the IRB Committee of the Hamad General Hospital, Hamad Medical Corporation (IRB – HMC # RP 7100/07). All human studies have been approved by the Research Ethics Committee and have been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki. Each participant was provided with brief information about the study and was assured of strict confidentiality. All the persons agreed to participate in this study gave their verbal consent prior to their inclusion in the study. Escort of the patients gave verbal consent on behalf of patients, if any patients have major cognitive dysfunction.

3. Data collection

3.1. Selection of schizophrenia patients

The cases are patients with schizophrenia above 20 years diagnosed as having schizophrenia as per ICD 10 diagnosis. The

diagnoses of the patients were recorded in their medical files. A total of 233 schizophrenia patients were selected by a simple random sampling procedure from the outpatient clinics of the Psychiatry hospital during the study period. This is the only psychiatry hospital in the State of Qatar and all patients with mental disorders are treated in this hospital. 295 schizophrenia subjects were approached and 233 subjects agreed to participate in this study, thus giving a response rate of 78.9%.

3.2. Selection of controls

Control subjects aged above 20 years were identified from community as healthy subjects. The control subjects, defined as those who had no history of psychiatric illness, were randomly selected from health centers in a way matching to the age and gender of cases to give a good representative sample of the studied population. This group involved a random sample of 466 healthy subjects. During the study period, 602 subjects were approached and of whom 466 subjects were cooperative and agreed to participate in the study, for a response rate of 77.4%.

3.3. Measurements and definitions

3.3.1. Physical examination

Physical examination and measurements were performed by a trained nurse. Height was measured in centimeters using a height scale (SECA, Germany) while the subject was standing bare feet and with normal straight posture. Male subjects were requested to remove their head cover (*Igaal* and *Gutra*). Weight was measured in kilograms using a weight scale (SECA, Germany). The subjects were asked to remove any objects from their pockets and to stand on the weight scale bare feet with light clothing. BMI was calculated as the ratio of weight (kilogram) to the square of height (meters). A person was considered obese if the BMI value was $\geq 30 \text{ kg/m}^2$, overweight if $\text{BMI} \geq 25 \text{ kg/m}^2$ and $< 30 \text{ kg/m}^2$.

Hypertension was taken according to the definition of ATP III which is $\text{SBP} \geq 130 \text{ mmHg}$ or $\text{DBP} \geq 85 \text{ mmHg}$ or using anti-hypertensive medication. Two readings of the systolic (SBP) and diastolic (DBP) blood pressure were taken from the subject's left arm while seated and his/her arm at heart level, using a standard zero mercury sphygmomanometer after at least 10–15 min of rest. Then the average of the two readings was obtained.

Waist circumference was measured in centimeters with subjects wearing light clothes at midway level between lower rib margin and iliac crest using non-stretchable measuring tape. Waist circumference was measured according to the definition of ATP III and considered as risk factor for metabolic syndrome.

3.3.2. Laboratory measurements

Fasting blood venous samples were collected from all participants for determination of impaired fasting glucose, low HDL and triglyceride. The criteria for impaired fasting glucose, low HDL and triglyceride were according to the definition of ATP III as classified here in below.

3.4. National cholesterol education program – third adult treatment panel (ATP III) [12]

According to ATP III criteria, a participant has the metabolic syndrome if she/he has three or more of the following criteria: (1) $\text{FPG} \geq 100 \text{ mg/dl}$ (5.6 mmol/L), (2) blood pressure $\geq 130/85 \text{ mmHg}$, (3) triglyceride $\geq 150 \text{ mg/dl}$ (1.7 mmol/L), (4) HDL cholesterol: men $< 40 \text{ mg/dl}$ (1.03 mmol/L); women $< 50 \text{ mg/dl}$ (1.29 mmol/L) and (5) Men with waist circumference $> 102 \text{ cm}$ and women with waist circumference $> 88 \text{ cm}$.

Download English Version:

<https://daneshyari.com/en/article/2910211>

Download Persian Version:

<https://daneshyari.com/article/2910211>

[Daneshyari.com](https://daneshyari.com)