Coronary heart disease risk in schizophrenic patients

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Aim

The aim of the present study was to determine the risk of coronary disease in a cohort of schizophrenic patients with antipsychotic medication, and to compare this predictive value with the characteristics of a Spanish population.

Background

People with schizophrenia suffer from increased morbidity and mortality compared with the general population, having approximately a 20% shorter life expectancy. Schizophrenic patients are reported to be twice as likely to die from cardiovascular disease than those in the general population. Metabolic syndrome MS, a cluster of disorders comprising obesity, dyslipidemias, glucose intolerance with insulin resistance and hypertension, is highly predictive of cardiovascular disease. Several studies have shown high prevalence rates of MS in patients with schizophrenia (at least double compared to an age matched population sample). The interest in this topic has been renewed since the introduction of second-generation antipsychotics and their possible association with metabolic abnormalities. In addition, smoking, poor diet, reduced physical activity and alcohol or drug abuse, contribute to the overall cardiovascular risk. Appropiate identification and management of these risk factors are very important in reducing the risk, and thereby, improving the physical health of these patients.

Methods

Seventy five adult patients, at least 18 years of age, suffering from stabilized schizophrenic disorder with antipsychotic treatment (primary and secondary generation), attending a mental health center were enrolled. A minimum of 12 weeks of antipsychotic treatment was required before inclusion in the study. We evaluated the prevalence of MS in schizophrenic patients. All patients met diagnostic DSM-IV criteria for schizophrenia.

Values of criteria parameters defining MS were determinated (according to Adult Treatment Panel III –at least three ATP III criteria for defining MS): 1.anthropometric measures (waist circumference WC>102 cm for men and>80 for women, body mass index BMI>28.8), 2.blood test values (triglycerides>150 mg/dl, HDL-cholesterol<40mg/dl for men and 50 for women, glucose> or equal 110 mg/dl) and 3.blood pressure > or equal 130/85 mmHg.

Lifestyle factors (smoking, alcohol consumption, diet and exercise) were studied.

A Framingham function for predicting 10 year coronary deaths and non-fatal myocardial infarction (effective method of estimating cardiovascular risk described in literature) was applied to our sample (cases, N 75) and was compared with a population of the province of Gerona, Spain (controls, N 225).

Patients were paired by age and sex (retrospective case-control study).

Results

We observed MS in 34.7% of our patients, with obesity being the most common MS criteria (table 1). Age mean (years) was 40.9 in cases and 41.47 in controls. There were significant difference (most common in our sample) in WC, BMI, triglycerides and smoking values between cases and controls (table 2). No significative differences were detected in blood pressure, cholesterol and glucose values between both groups. This blood values are well controlled in our patients (more significative treatments for this problems are present in our sample). There were no significant differences in the 10 year risk of coronary disease prediction between our sample (2.5%) to spanish population (3.1%). Mann-Whitney test was used to compare several values of both groups.

Table 1. Demographyc and Clinical Characteristics of cases sample

Sample (N=75)	
Age Years (SD/Rank)	40.9 (11,4 / 20-73)
Women N (%)	23 (30.7%)
Men N (%)	52 (69.3%)
Smokers N (%)	37 (49.3%)
WC (SD/Rank)	105.3 (13.7 / 74-158)
BMI (SD/Rank)	30 (4.8 / 21-42)
HDL col (SD/Rank)	46.5 (11.8 / 23-84)
Gluc (SD/Rank)	94.3 (22.3 / 70-227)
Systolic BP (SD/Rank)	115,8 (18,4 / 85-175)
Diastolic BP (SD/Rank)	73 (11,2 / 50-100)
TG P50 (Rank)	144 (46-434)
Metabolic Syndrome N (%)	26 (34,7%)
Obesity N (%)	57 (76%)
Hypertension N (%)	22 (29,3%)
Hypertriglyceridemia N (%)	25 (33%)
Hyperglycemia N (%)	8 (10,7%)
Leisure-time physical activity Met.min/d) Men/Women	275,8 / 199,5
Sedentary life Style (%) Men/Women	36,5% / 43,5%
Mediterranean diet score (unit) Men/Women	4,3±2 / 5,3 ±1,7
Alcohol consumption (g/d) Men/women	1,1± 5 / 4,2± 11

Values are means/P50 ± standar deviation or %

Table 2. Clinical Characteristics and statistics between cases and controls

	Mean Cases (N=75)	Std Deviation	Mean Controls (N=225)	Std Deviation	P
10 year risk of coronary disease prediction %	2.5%		3.1%		0.153
Age (Years)	40.9	11.4	41.47	10.5	0.969
WC (cm)	105.3	13.7	88.5	12.9	0.006
BMI	30	4.8	26.5	4.5	0.010
HDL col (mg/dl)	46.5	11.8	50.5	14.6	0.248
Total Col (mg/dl)	187.3	34.8	218.6	40.7	0.546
Gluc (mg/dl)	94.3	22.3	99.7	18.3	0.534
Systolic BP (mm Hg)	115.8	18.4	124.5	17.5	0.969
Diastolic BP (mm Hg)	73	11.2	82.6	9.7	0.970
TG P50 (mg/dl)	144	85.3	115.2	76.2	0.004
Smokers %	49.3%		36%		0.035
Col. BP. Gluc Treatment %	39%		23%		0.009

Conclusion

MS was highly prevalent in our schizophrenic patients (34.7%). Cardiovascular risk were not higher in our patients comparing with spanish population. Obesity were higher in our sample. In future (years) is probably that obesity can produce the appearance of blood abnormalities in our sample that can increase the cardiovascular risk in our patients, probably higher than general population. Smoking and obesity prevention targeting lifestyle risk factors (nutrition, activity) and antipsychotic treatment may be particulary important in these patients. The role of antipsychotic medication in the association of MS in schizophrenic patients, was difficult to demonstrate statistically in our study due to both, the combination of antipsychotic drugs taking by our patients and our sample size. Further studies will be required to more fully understand the antipsychotic treatment and lifestyle factors contribution to MS in patients with schizophrenia.

References

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