

Original Research Article

Assessment of diabetes in patients with schizophrenia- A clinical study

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Abstract

Background:The present study was conducted to assess diabetes in patients with schizophrenia.**Materials & Methods:**In 105 schizophrenia subjects, mean fasting glucose, impaired glucose tolerance and diabetes was assessed. **Results:** The mean age was 40.2 years, BMI was 28.4 kg/m² and fasting glucose was 5.21 mmol/l.out of 105 patients, 47 were normal, impaired fasting glucose was seen in 12, impaired glucose tolerance in 14 and diabetes in 32 patients. The difference was significant (P< 0.05).**Conclusion:**Most of the patients with schizophrenia had diabetes followed by impaired glucose tolerance.

Keywords: Diabetes, Impaired glucose tolerance, Schizophrenia

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Introduction

Diabetes is common and seen in one in five patients with schizophrenia. It is more prevalent than in the general population and contributes to the increased morbidity and shortened lifespan seen in this population[1]. However, screening and treatment for diabetes and other metabolic conditions remain poor for these patients. Multiple factors including genetic risk,neurobiologic mechanisms ,psychotropic medications, and environmental factors contribute to the increased prevalence of diabetes[2]. Primary care physicians should be aware of adverse effects of psychotropic medications that can cause or exacerbate diabetes and its complications. Management of diabetes requires physicians to tailor treatment recommendations to address special needs of this population [3]. In addition to behavioral interventions, medications such as metformin have shown promise in attenuating weight loss and preventing hyperglycemia in those patients being treated with antipsychotic medications[4].People with schizophrenia have an

increased risk of diabetes and other metabolic abnormalities. A renewed interest in this phenomenon has been sparked by the adverse metabolic effects of antipsychotic medications used in the treatment of schizophrenia[5]. It is now well established that people with serious mental illness (SMI),including schizophrenia, have excess morbidity and mortality leading to a reduced lifespan of 20–25 years compared with the rest of the population[6]. The present study was conducted to assess diabetes in patients with schizophrenia.

Material & Methods

The present study comprised of 105schizophrenia subjects diagnosed based on diagnostic and Statistical Manual of Mental Disorders, (DSM-IV) criteria. All patients were informed regarding the study and their consent was obtained. Data such as name, age, gender etc. was recorded. Diabetes was defined as a mean fasting glucose 7.0 mmol/l and/or a glucose level at t- 120 >11.1 mmol/l. Impaired glucose tolerance was diagnosed when the plasma glucose levels at t- 120 were between 7.8 and <11.1 mmol/l. Impaired fasting glucose was diagnosed when the mean fasting glucose plasma level at t- 15 and t- 0 was between 6.1 and 7.0, with a glucose level at t- 120 <7.8 mmol/l. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

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E-mail: nitinranjangupta@gmail.com**Results****Table 1:Distribution of patients**

Gender	Total- 105	
	Males	Females
Number	63	42

Table 1shows that out of 105 patients, males were 63 and females were 42.

Table 2:Assessment of variables by glucose metabolism

Variables	Mean	SD
Age	40.2	5.6
BMI	28.4	3.1
Fasting glucose (mmol/l)	5.21	1.7

Table 2 shows that mean age was 40.2 years, BMI was 28.4 kg/m² and fasting glucose was 5.21 mmol/l.

Table 2:Assessment of variables by glucose metabolism

Variables	Number	P value
Normal	47	0.021
Impaired fasting glucose	12	
Impaired glucose tolerance	14	
Diabetes	32	

Table 2, Fig 1 shows that out of 105 patients, 47 were normal, impaired fasting glucose was seen in 12, impaired glucose tolerance in 14 and diabetes in 32 patients. The difference was significant (P< 0.05).

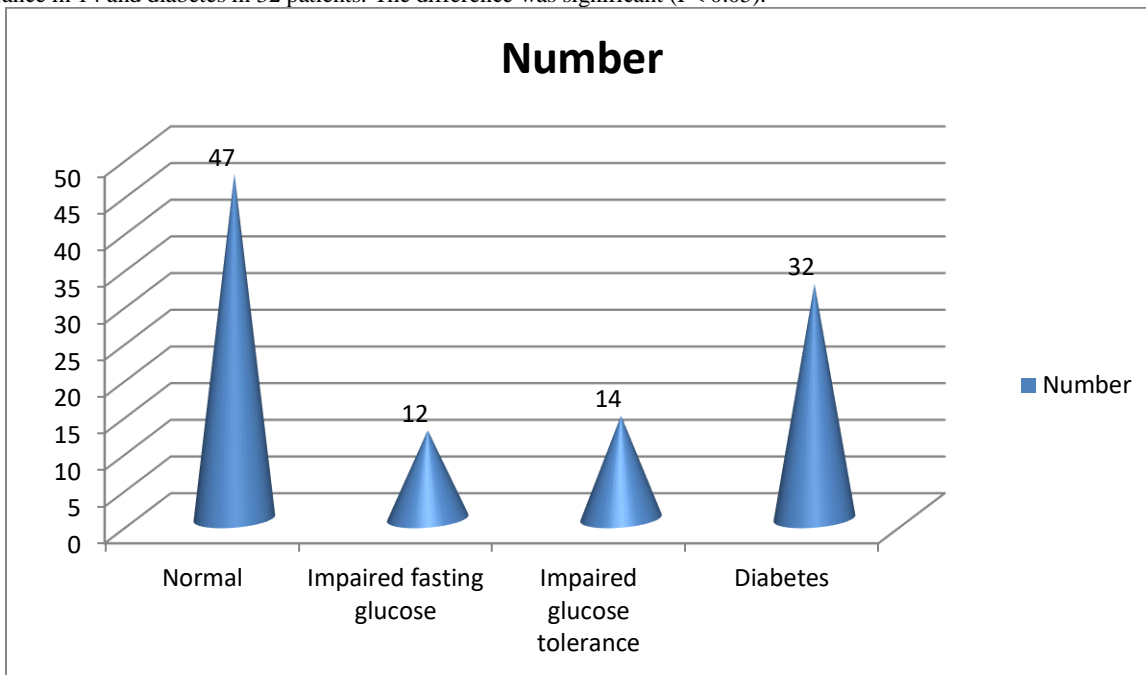


Fig 1:Assessment of variables by glucose metabolism

Discussion

The increased mortality of schizophrenia is largely attributable to physical illness, including metabolic abnormalities and cardiovascular disease, rather than factors that are directly associated with psychiatric illness such as suicide or homicide. Metabolic syndrome occurs in one in three patients and diabetes in one in five patients[7]. These abnormalities not only confer an elevated cardiovascular risk and increased mortality in those with schizophrenia and other mental illness, but also are associated with poor psychiatric and functional outcomes. For many people with schizophrenia and other serious mental illness, the mental health center is the primary point of contact with the health care system. But there are multiple barriers to adequate screening and treatment at the mental health

centers[8]. Referrals to community medical providers are challenging, in part due to administrative barriers, lack of communication between mental health and primary care practitioners and clinics, and also poor patient experience in medical settings. For patients with schizophrenia, psychiatric symptoms and cognitive deficits limit their social functioning and a fast paced medical health care environment is difficult to navigate. In one survey, these patients cited continuity of care and listening skills as qualities important in medical practitioners [9]. The present study was conducted to assess diabetes in patients with schizophrenia. In present study, out of 105 patients, males were 63 and females were 42. Cohen et al[10]. assessed glucose metabolism in a population of patients with schizophrenia or schizoaffective disorder in 200 unselected in- and outpatients. The mainly Western European

(87.7%) study population had a mean age of 40.8 years, was 70% male, and had a mean fasting glucose of 5.1 mmol/l and a mean fasting insulin of 14.8 mU/l. Hyperglycemia was present in 7% of the population: 1.5% with impaired fasting glucose and 5.5% with impaired glucose tolerance. The prevalence of diabetes was 14.5%, of which 8% was previously known and 6.5% was newly diagnosed. Compared with a 1.5% prevalence of diabetes in the age-matched general Dutch population, the prevalence of identified cases was significantly increased in the study population. Comparable figures on the prevalence of hyperglycemia in the general population are not available. Insulin resistance was increased in the study population as a whole (HOMA of insulin resistance: 3.1–3.5), irrespective of the use of antipsychotic medication and, if used, irrespective of its type (typical or atypical). No indication of beta cell defect was found, whereas a non-significant increased insulin resistance was found with antipsychotic medication. We found that mean age was 40.2 years, BMI was 28.4 kg/m² and fasting glucose was 5.21 mmol/l. Out of 105 patients, 47 were normal, impaired fasting glucose was seen in 12, impaired glucose tolerance in 14 and diabetes in 32 patients. Henderson et al[11] using the frequently sampled intravenous glucose tolerance test, found significant impairment of glucose effectiveness in patients treated with olanzapine and clozapine when compared with risperidone. No significant differences in age or BMI were reported. In a prospective study of patients treated with clozapine during 2–4 months, Howes et al[12] found a significant increase of plasma glucose levels, independent of change in either insulin resistance or BMI. The shortcoming of the study is small sample size.

Conclusion

Authors found that most of the patients with schizophrenia had diabetes followed by impaired glucose tolerance.

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