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Prevalence of Diabetes Mellitus and its Associated Risk Factors in Age Group of 20 Years and above in Bikaner (Rajasthan), India

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Abstract

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Depending on the etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. It is estimated that 20% of global burden of DM resides in South East Asia Region (SEAR) area, is likely to triple by 2025 increasing from present estimates of about 30 million to 80 million. In observational and intervention studies obesity and physical inactivity represent the most important modifiable risk factors for DM. Indeed, in subjects with pre-diabetes, lifestyle intervention significantly and cost effectively reduced the incidence of diabetes.

Keywords: Body mass; Diabetes mellitus; Glucose; Obesity; Population risk; Prevalence

Objective

Objective of our study was to assess the prevalence and risk factors for diabetes mellitus in the age group of 20 years and above in one of the semi-urban areas of Bikaner.

Study Design

Cross sectional study

Material and Methods

A cross sectional study was carried out in Bikaner, an administrative block of Rajasthan. A total of 1040 subjects (500 males and 540 females) aged 20 years were screened for Diabetes Mellitus. Body mass index, waist to hip ratio, personal history and family history were recorded at baseline through pretested questionnaire. After an overweight fast, blood samples were drawn for determination of fasting plasma glucose. In the case of fasting plasma glucose level of 126 mg/dL, a second determination was performed one week later. Diagnosis of diabetes mellitus was based on the American Diabetes Association criteria 2004. The statistical analysis of the data was performed by using statistical software SPSS.

Results

The prevalence of diabetes mellitus was 6.05%, with known diabetes mellitus being 4.03% of the study population and undiagnosed diabetes mellitus being 2.02% subjects. Significant difference was detected between males and females (3.6% vs. 8.3%, $p<0.05$). There was also significant increase in the prevalence of diabetes mellitus with increasing age (age 20-40 years: 3.02% vs. >60 years 16.66%, $p<0.05$). Furthermore prevalence of obesity (body mass index>25 Kg/m^2) was 36.82% more so central obesity, and family history were significantly associated with the presence of diabetes mellitus, $p<0.001$.

Conclusion

The prevalence of diabetes mellitus is showing a rising trend in Bikaner, life style changes and aggressive control of the risk factors are urgently needed to tame this trend.

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