ASSESSMENT OF THE PREVALENCE AND RISK FACTORS OF DIABETES MELLITUS IN RURAL AREAS OF PESHAWAR, KHYBER PAKHTUNKHWA

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ABSTRACT

BACKGROUND: WHO ranks Pakistan 7th on Diabetes mellitus prevalence list in 2008; therefore diabetes posing threat to economy and quality of life of people due to poor glycemic Control and high rates of complications. The objective of present study was therefore to assess the prevalence and risk factors of diabetes in elected areas of Peshawar.

METHODS: In this cross sectional study, data was collected from 700 people of Palosi Tehkal bala using questionnaire and random blood sugar tests by glucometer. Diabetes status was defined by already diagnosed diabetic and Random Blood Sugar value higher than 200mg/dl. Data was analyzed for diabetes prevalence. Chi square and Odds ratio were used to find its association with age, obesity, monthly income, hypertension, family history, Gender, tobacco use and exercise

RESULTS: 105 out of 700 people were diagnosed with diabetes. This is 15% of the total respondents. Association of diabetes was found with age, family history, obesity and hypertension. Out of the total respondents, 15.7% males and 14.1% females were found diabetic.

CONCLUSION: Diabetes prevalence rate is high and is highly affected by increasing age, hypertension, family history, and obesity.

KEY WORDS: Diabetes, Prevalence, Risk factors

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INTRODUCTION

Diabetes Mellitus (DM) is a global epidemic in this millennium. Colagiuri[1] et al reported that the highest increase in Diabetes Mellitus prevalence is amongst low and middle-income countries, predominantly within the 40-59 years' age group, although a tendency is seen for onset at a younger age. According to WHO[2], 80% of Diabetes deaths occur in low and middle income countries.

Danaei et al[3] reported that globally, as of 2013, an estimated 347 million people had Diabetes Mellitus. Diabetes Mellitus occurs throughout the world, but is more common (especially Type 2) in the more developed countries. According to Wild S et al[4] the greatest increase in prevalence is, however, expected to occur in Asia and Africa, where most patients will probably be found by 2030. The increase in incidence in developing countries follows the trend of urbanization and lifestyle changes, perhaps most importantly a "Western-style" diet.

South Asian population is more predisposed to type 2 DM[5]. The prevalence of DM has estimated to increase over 151% between year 2000 and 2030 in South Asian region[6]. There were approximately 6.6 million adult people in Pakistan having DM in 2012 making the tenth largest nation with this problem worldwide[7]. The prevalence of diabetes is high in Pakistan and patients with this problem are developing complications at a relative younger age here. Cost of treatment of DM is extremely high in Pakistan, where patients have to bear direct and indirect cost out of their own pocket. In 2006 it was found that the mean economic cost borne by each patient with diabetes and his/her family was Rs. 2,070/- for each visit and Rs. 12,420/-annually.[8] Although we are moving towards westernization as a society, still there is some family bonding in the people of Pakistan. These family centered cares along with the patient's own will is important aspect of treatment of DM[9].

Pakistan is a low income country with limited resources. DM is affecting both high and low income people. There are different problems in the diagnosis of this disease especially lack of trained endocrinologists in the country. Nearly all of them are practicing in the major cities of the country. Keeping in view the need of this important discipline, College of Physicians and Surgeons of Pakistan (CPSP) has started post graduate training i.e. Fellowship of College of Physicians and Surgeons Pakistan (FCPS) in the specialty of Endocrinology in 2010. Many diabetic people are living in rural areas of Pakistan. Mortality rates of DM in remote and rural areas is higher (between 10% and 70%) compared to the patients living in cities even in developed countries like Australia[10]. This is more important in the context of Pakistan where health facilities are limited especially in rural areas. Close monitoring of diabetic patients is important for the long term care including diet, exercise/physical activity, medications, regular self-monitoring blood glucose and taking more care of himself/herself in daily life.

MATERIAL & METHODS

A cross-sectional study was done between January 2017 to May 2017. A random samples of about 700

volunteers from two different areas of Peshawar were taken to analyze the blood sugar levels. Risk factors were assessed using a standardized questionnaire. Data obtained were analyzed using SPSS version 20 for windo

RESULTS

In our research the overall prevalence of diabetes was 15% (105/700), for males the prevalence was 15.7% and for females the prevalence was 14.1%. The chi square value is 0.355 and the p value is 0.55.The result is not significant at p<0.05.The diabetes is more common in people of age >40(20.4%) as compared to 18-39-year age group (7.8%). The chi square value is 21.277 and the p value is 0. 00001.The result is significant at p<0.01 with an odds ratio of 3.00. In our study Obesity have positive correlation with diabetes.Out of 292 obese people 58 have diabetes (19.8%).Out of 408 non obese 47 have diabetes (11.5%).The chi square statistic is 9.292 and the p value is 0.002. The result is significant at p<0.01. The odd ratio is 1.9 (95 CI).The relation of diabetes was also found to be significant with family history of diabetes. The total sample size was 700, out of which233 respondents had positive family history, out of which 48 (20.6%) have diabetes. 467 respondent had negative family history, out of which57(12.2%) have diabetes.The chi square value is 8.59 and the p value is 0.003, with odd ratio of 1.86. The result is significant at p<0.01. Regarding hypertension 12.5% of normotensive have diabetes while 22% of hypertensive were diabetics. The chi square value is 9.392 and p value is 0.002 with odds ratio of 1.96. The result is significant at p<0.01.

DISCUSSION

According to our analyzed data, 105 out of 700 people were diagnosed diabetic, this is 15% of total respondents. This termed to be a very high rate and is strongly in contexts with previous papers which have shown that south Asians appear to be at greater risk for diabetes than other ethnic groups[11]. According to WHO research in 2000 which stated that there will be doubling of diabetes prevalence in 2030, this greater increase in prevalence is however expected to occur in Asia and Africa where most patients will be found diabetic by 2030[12]. In a study done on 1035 adults in NWFP the overall prevalence was 11.1%[13]. According to our studies diabetes is strongly associated with age and increase in age results in increased number of diabetics; this is in context with the previous studies that also show that risk of diabetes increases with increase in age[14]. Our study shows that there is strong association of hypertension with diabetes. This is strongly in context with previous studies which also show that hypertensive patients are at high risk of developing diabetes [15]. Our study shows no association of physical activity with diabetes. This is opposite to previous studies which shows physical activity can prevent and control the diabetes[16]. The reason may be that those who are normal, like diabetics they too don't have time for physical activities due to their busy routine.Our study shows that obesity has strong association with diabetes which is in context with the previous studies stating BMI's strong association with diabetes[17]. Our study shows a strong association of diabetes with family history which is in context with previous studies, that also show that there is a strong association of diabetes with family history[18].

CONCLUSION

Diabetes prevalence rate is high and is highly affected by increasing age, hypertension, family history, and obesity. Preventive measures need to be focused on these contributing factors.

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CONFLICT OF INTEREST

None declared.

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NIL

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.