



High Prevalence of Diabetes and Metabolic Syndrome Among Policemen

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The prevalence of diabetes is rapidly rising all over the globe at an alarming rate.¹ Over the past 30 years, the status of diabetes has changed from being considered a mild disorder of the elderly, to one of the major causes of morbidity and mortality affecting the youth and middle aged. It is important to note that the rise in prevalence is seen in all six inhabited continents of the globe.² The major driver of the epidemic is the more common form of diabetes namely type 2 diabetes, which accounts more than 90% of all diabetic cases.

India leads the world with largest number of diabetic subjects thus earning it the dubious distinction of being termed the “Diabetes capital of the world”. According to the Diabetes Atlas 2006 published by the International Diabetes Federation, the number of people with diabetes in India is currently around 40 million and this number is expected to rise to 70 million by 2025, unless urgent preventive steps are taken.³ The so called “Asian Indian Phenotype” refers to certain unique clinical and biochemical abnormalities in Indians which include increased insulin resistance, greater abdominal adiposity i.e., higher waist circumference despite lower body mass index, lower adiponectin and higher high sensitive C-reactive protein levels.⁴ This phenotype makes Asian Indians more prone to diabetes and premature coronary artery disease.⁵

Urban rural differences in the prevalence of diabetes have been consistently reported from India. While the ICMR study in the 1970's reported that the prevalence was 2.1 per cent in urban and 1.5 per cent in rural areas,⁶ a more recent WHO-ICMR study based on NCD risk factor surveillance showed that the prevalence of self-reported diabetes was 7.3% in urban, 3.2% in periurban, and 3.1% in rural areas.⁷ A study done in southern Kerala looked at the variations in the prevalence of type 2 diabetes among different geographic divisions within a region.⁸ The prevalence of diabetes was highest in the urban (12.4%) areas, followed by the midland (8.1%), highland (5.8%) and coastal division (2.5%). In Prevalence Of Diabetes in India Study (PODIS), based on the ADA criteria, the prevalence of diabetes was 4.7 per cent in the urban compared to the 2.0 per cent

in the rural population while the prevalence of diabetes according to the WHO criteria was 5.6 and 2.7 per cent among urban and rural areas respectively.^{9,10} In National Urban Diabetes Survey (NUDS),¹⁵ based on WHO criteria, the age standardized prevalence of type 2 diabetes was 12.1 per cent. This study also revealed that the prevalence in the southern part of India to be higher-13.5 per cent in Chennai, 12.4 per cent in Bangalore, and 16.6 per cent in Hyderabad; compared to eastern India (Kolkata), 11.7 per cent; northern India (New Delhi), 11.6 per cent; and western India (Mumbai), 9.3 per cent. Thus it is clear that different studies has shown different results and what is needed is a truly national study to determine the exact prevalence of diabetes in urban and rural areas in India .

In this issue of JAPI , two interesting studies, one from Kolkata¹¹ and the other from Chennai,²⁰ report on the prevalence of diabetes and metabolic syndrome respectively among police personnel in these two cities.

In the Kolkata-policemen study, S Kumar et al¹¹ estimated the prevalence of diabetes and IFG in a population of policemen and evaluated the influence of risk factors such as body mass index (BMI), waist circumference (WC), waist-hip ratio (WHR), waist-height ratio (WHtR) and family history of diabetes on prevalence of diabetes. The study was conducted in men in the middle income group and used capillary blood (glucometer) for measuring the fasting blood glucose level. This study reports the diabetic prevalence to be 11.5% of which 10.4% were known diabetic and 1.1% were newly diagnosed. Additionally, 6.2 % had impaired fasting glucose (IFG). The study also shows that the prevalence of diabetes increases with age, parental history, waist circumference, WHR and WHtR were significantly greater in IFG and diabetes groups compared to the normoglycaemic group. However there was no statistically significant difference in BMI between the three groups studied .

While the overall prevalence of diabetes in this study is consistent with data from Kolkata in NUDS, the prevalence of newly diagnosed diabetes in this study is considerably lower than reported in Kolkata in NUDS,¹⁵ or Chennai in CUPS¹² or CURES.^{13,14} One of the reasons for this could be that fasting blood glucose was used for diagnosis rather than the 2 hour blood glucose value. It has been proved in earlier studies that 2-hr value has better sensitivity in detecting type 2 diabetic patients than fasting blood

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glucose.¹⁶ Alternatively it might be because policemen may be undergoing periodic testing and hence the undiagnosed diabetes is low.

In the recent years, it has become clear that visceral, rather than subcutaneous fat, is associated with insulin resistance.¹⁷ This study confirms earlier observations that the waist circumference (WC) is an important predictor of diabetes. This study also shows the importance of waist height ratio (WhtR) in increasing risk of type 2 diabetes. This is a novel index not reported so far in India, although some earlier studies in other countries have shown that WhtR is a useful index to assess risk of type 2 diabetes.¹⁸⁻¹⁹

Another study reported in this issue by Vijay Viswanathan and colleagues from Chennai,²⁰ compares the prevalence of diabetes among policemen and general population (GP) in Chennai. This study reports a very high prevalence of diabetes among policemen (32%) compared to the GP (20%). This study also reports the prevalence of metabolic syndrome (MS) among policemen to be 57% and that in GP to be 28%. This figures appears to be much higher than the prevalence of MS reported in a representative population of Chennai where the prevalence of MS was found to be 23.2% using WHO criteria 18.3% using NCEP-ATP III criteria and 25.8% using IDF criteria.²¹ In the study by Vijay et al, policemen also had a higher mean of biochemical parameters and anthropometric measurements. This report thus suggests that policemen are at high risk of developing diabetes and cardiometabolic risk factors. The possible reason for high prevalence could be due to poor physical activity, altered sleep cycle, improper food habits and the tremendous work pressure and stress.

Thus it is clear from both Kolkata and Chennai studies that policemen should be targeted for therapeutic life style changes to keep themselves healthy and to prevent diabetes and metabolic syndrome as they are the law keepers of the nation. Such a program could be linked with the National Program for Prevention and Control of Diabetes / Cardiovascular Disease and Stroke recently launched by the Government of India.²²

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