

Cardiovascular risk profile at different levels of glucose tolerance among patients in Abu Dhabi, UAE

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Background and aims: Prevalence of diabetes in the United Arab Emirates has been reported to be the tenth highest in the world. Understanding risk factors in pre-diabetes and diabetes stages in this population has therapeutic, strategic and health economic implications.

Materials and methods: A retrospective analysis of 50,894 adults (age>18 years; 54% female, 46% male; 67% of Emirati Arab ethnicity) attending Imperial College London Diabetes Centre, Abu Dhabi was conducted to determine cardiovascular risk profile of subjects with normal glucose tolerance (NGT), impaired fasting glycaemia (IFG), impaired glucose tolerance (IGT), IFG +IGT and type 2 diabetes mellitus (T2DM). Most patients were on regular treatment.

Results: 33,805 had their glucose tolerance status recorded in their files. There were 20,991 patients with T2DM (age 54.4 ± 12.1 years, BMI 31.4 ± 6.0 kg/m², waist circumference 101.3 ± 12.3 cm). Total, LDL, HDL cholesterol and triglyceride were 4.2 ± 1.0 , 2.8 ± 0.8 , 1.1 ± 0.3 and 1.8 ± 1.2 mmol/l respectively. Among patients with T2DM 13.3% were current smokers. Macroalbuminuria was noted in 237 patients; microalbuminuria was present in 1355. Mean UKPDS ten year cardiovascular risk in patients with type 2 diabetes mellitus and not known to have ischaemic heart disease (IHD) was 7.6 %. Prevalence of IHD increased from 0.8% in the NGT group to 2.6% in the IFG and 8.6% in T2DM patients. There was a highly significant difference between NGT and T2DM groups for all the risk factors studied ($p<0.0001$). A similar trend was seen in waist circumference and waist to hip ratio ($p<0.0001$) but not BMI ($p>0.34$) from IFG to T2DM (independent t-test).

Conclusion: In the population studied, waist circumference was a better predictor of progression from pre-diabetes to diabetes. A significant trend in prevalence of ischaemic heart disease was seen from normal glucose tolerance to pre-diabetes and diabetes. Public health strategies will need to address weight gain and in particular abdominal obesity which was a major and prevalent risk across all groups including those with NGT.