INSULIN RESISTANCE IN SEMIURBAN SOUTH WESTERN NIGERIA

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ABSTRACT

BACKGROUND/OBJECTIVE

The International Diabetes Federation (IDF) estimates that currently more than 246 million people have diabetes worldwide, and this figure is expected to reach 380 million by 2030. Although insulin resistance is a modifiable precursor of diabetes and potentially of cardiovascular disease, there are scanty reports on its prevalence in Nigeria. The aim of this study was to determine the prevalence of insulin resistance and its relationship with indices of obesity in a semi urban Nigeria

SUBJECTS, MATERIALS AND METHODS

Fifty subjects with no prior history of hypertension or diabetes mellitus were evaluated for insulin resistance using the homeostasis model. The blood pressure and the anthropometric parameters of the subjects were measured, and fasting plasma glucose and insulin determined. Insulin resistance was defined at two levels

of HOMA scores: score >1 and score >2 and its correlation with waist circumference, body mass index and waist to hip ratio were determined.

RESULTS

When insulin resistance was defined as HOMA score >1, the prevalence of insulin resistance was 29.2% in males and 53.8% in females ($p>0.05$), with a combined prevalence of 42%. When insulin resistance was taken as HOMA score >2 the females were significantly more resistant to insulin than the males (females 38.5% vs 12.5%, $p <0.05$), and the combined prevalence was 26%. There was positive but weak correlation between the anthropometric indices and insulin resistance. The correlation between insulin resistance and the anthropometric indices was best with waist circumference, while it was least with waist-to-hip ratio (0.181 vs. 0.081). Of the three indices of obesity, waist circumference contributed most to HOMA-IR.

CONCLUSION

Insulin resistance is common in the South Western Nigerian population studied, and the female subjects were more insulin resistant than their male counterparts. There was a positive but weak correlation between insulin resistance and anthropometric indices.

Key Words: insulin resistance, HOMA-IR, obesity