SIMPLE ANTHROPOMETRIC MEASURES PREDICT FASTING HYPERINSULINEMIA AND CLUSTERING OF CARDIOVASCULAR RISK FACTORS IN ASIAN INDIAN ADOLESCENTS

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Identification of anthropometric variables and their clustering as important markers of insulin resistance and cardiovascular risk has not been investigated in Asian Indian adolescents. Therefore, the objective of this study was to identify the anthropometric measures of obesity that best predict insulin resistance and the clustering of cardiovascular risk factors in adolescents.

The data for the present study were obtained from the *E*pidemiological *S*tudy of *A*dolescents and *Y*oung adults (ESAY study), conducted between 2000-03. The data for the analysis included 1201 subjects (680 boys and 521 girls) aged 14-18 years.

The cardiovascular risk factors considered were: hypercholesterolemia, hypertriglyceridemia, low levels of HDL-C, impaired fasting blood glucose (IFG), fasting hyperinsulinemia and hypertension. From these risk factors, the following three categories, including two clusters, were devised for statistical analysis: **Cluster *1***: Hypercholesterolemia, hypertriglyceridemia, low levels of HDL-C, IFG, & hypertension; **Cluster *2***: hypercholesterolemia, hypertriglyceridemia, low levels of HDL-C, IFG, hypertension; ***3***.Fasting hyperinsulinemia alone.

Overall, the accuracy of BMI, WC and subscapular skinfold thickness to predict these abnormalities was significantly better in boys than in girls. Furthermore, the AUC was highest for subscapular skinfold thickness for cluster 1 in boys and for cluster 2 in girls. In girls the AUC for BMI and subscapular skinfold thickness was similar but higher than WC with fasting hyperinsulinemia as standard. The AUC for BMI and WC were similar for all three variables in boys and for clusters 1 and 2 in girls. These results would be important for risk prediction of adolescent males and females, and for generating correct definitions of the metabolic syndrome in Asian Indians.