Abstract

Objective: To assess the individual variability of HOMA and QUICKI indexes for the assessment of insulin resistance, using three fasting blood samples obtained within 30 minutes. Research methods & procedures: Data from 80 participants aged 41.5 ± 15 years (26 females), who underwent an oral glucose tolerance test to calculate Matsuda index, were used. Every participant had three fasting blood samples obtained within 30 minutes and four blood samples obtained at 30, 60, 90 and 120 minutes after a 75 g oral glucose load. Insulin and glucose were measured in each sample. HOMA and QUICKI indexes were calculated using the nine possible combinations of the three fasting blood samples. Matsuda index was calculated with all samples obtained. Results: Median values of HOMA-IR, HOMA-, QUICKI and Matsuda indexes were 1.9, 117.9, 0.35 and 3.71 arbitrary units, respectively. The individual variation coefficients of HOMA-IR, HOMA- and QUICKI were 11.8 (7.8-18.9), 15 (10.2-22.9) and 1.8 (8.8-21.9) % respectively. When compared with Matsuda index, the R squared values of HOMA-IR, HOMA- and QUICKI were 0.46, 0.2 and 0.71, respectively. Conclusions: Among fasting indexes for insulin resistance, QUICKI had the lower variation coefficient and the higher correlation with Matsuda index.

Keywords

Key words, HOMA, Matsuda, QUICKI.