Abstract

Purpose: To establish quantitative reference ranges for fasting profiles and oral glucose tolerance test for healthy adults in metropolitan region of Nairobi. Methods: A prospective study carried out on 871 healthy subjects from the metropolitan region of Kenya. Results: The fasting profile parameters investigated were fasting blood glucose (FBG), total cholesterol (TC) triglycerides (TG), high density lipoprotein cholesterol (HDLc), low density lipoprotein cholesterol (LDLC) and TC/HDLc ratio. In addition, oral glucose tolerance test (OGTT) was also investigated. Eight hundred and seventy one (871) healthy study subjects were involved in the study. Established reference ranges were as follows: FBG (venous whole blood) (2.1 – 5.7) mmol/L, TC (2.9 – 6.4) mmol/L, TG (0.44– 2.44), HDL C (1.1 – 2.1) mmol/L, LDLC (1.1 – 4.3) mmol/L, TC/HDLc ratio (1.1 – 5.4). Established reference ranges for oral glucose tolerance test (OGTT) were as follows: baseline/fasting blood glucose capillary whole blood (3.2–5.4) mmol/L, half hour (4.7-8.9) mmol/L, one hour (4.4-9.8) mmol/L, one hour and half (4-8.1) mmol/L and two hours (3.4-7.2) mmol/L. Results for gender differences for the studied parameters were as follows: FBG (p=0.124), TC (p=0.205), TG (p=0.705) HDLC (p= 0.52), LDLC (p=0.417) and TC/HDLc ratio (p=0.359). On the other hand, the gender results for timed OGTT were as follows: 0 hour (p=0.123), half hour (p=0.479), one hour (p=0.412), one hour and half (p=0.596) and two hours (p=0.630). Hence there were no gender disparities for the parameters in the studied adult Kenyan population. Conclusion: Since the established reference ranges are a reflection of the Kenyan adult population our clinical chemistry laboratory reports interpretations will henceforth be independent of what has been quoted in literature. Likewise effective diagnosis and management of glucose and lipids pathological disorders will be achieved by the use of established adult Kenyan reference ranges.