

Abstract

This study was aimed at determining the reference range values for eight liver function parameters that are routinely analyzed in the clinical chemistry laboratory of Meru Level 5 Hospital. The study was cross-sectional, population-based and carried out on the young population of ages one to seventeen years in Meru County, Kenya. A total of 768 samples were collected from the volunteers who participated in the study. Out of these, 740, comprising 360 females and 380 males that were found to be free from HIV, Hepatitis B and syphilis were used to construct the reference ranges. DRI - CHEM NX 500I Clinical Chemistry analyzer (Fujifilm, Europe) was used to analyze eight biochemical parameters. Determination of reference ranges was done in order to estimate the lower 2.5 and upper 97.5 percentiles of the distribution by use of parametric methods. The determined percentiles were considered the lower and upper reference limits respectively. Significant sex differences were observed in children reference values for total protein. Other parameters (alkaline phosphatase, gamma glutamyl transferase, direct bilirubin, total bilirubin, albumin, alanine aminotransferase, aspartate aminotransferase) did not show significant sex dependent differences. In conclusion, the findings of this study provide sex-specific reference range values for children from Meru County in Kenya. The study recommends the health care practitioners and facilities in the region under study to adopt the new reference values developed and for other regions in Kenya to carry out a similar study to determine their own reference values.