

Determine the Reference Intervals of Selected Tumor Markers Using Selected Healthy Adult Populations in Sri Lanka

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Reference Intervals (RI) are the range of values that is deemed normal for a physiological measurement in healthy persons. Due to the lack of locally derived reference values for the parameters, clinicians use RIs derived from the western population. Different studies indicated considerable variation in clinical chemistry reference intervals by several variables such as age, sex. This study aimed to determine RI values of four selected tumor marker tests: Alpha-fetoprotein (AFP), Carcinoembryonic antigen (CEA), Prostate specific antigen (PSA), and CA-125 according to the age and sex group of the selected healthy adult population in Sri Lanka as tumor markers have an important role in the detection, diagnosis, treatment and monitoring of some types of cancers. Population based cross-sectional study was conducted from March 2019 - October 2019 using selected total 1040 healthy adults based on inclusion-exclusion criteria. Minitab 17.3.1 was used to calculate descriptive statistics such as mean, median, and 2.5th – 97.5th percentiles range. Independent sample T-test and one-way ANOVA were used to see the association between variables. $p < 0.05$ was considered to determine a significant difference. There was a significant difference in RI values in the levels of CEA and AFP according to sex, but the RIs of PSA and CA-125 were not significantly different. The analyzed data of PSA and AFP across all age groups of participants were similar. However, there was a significant difference in the RI values of CA-125 and CEA. The study showed that some of the selected clinical chemistry parameters reference intervals of healthy adults in Sri Lanka were significantly different in reference intervals according to age and sex. Therefore, further study is required to establish reference intervals for Sri Lankan population.

Keywords: *reference intervals, tumor markers, AFP, CEA, PSA*