

Establishment of Reference Interval for Serum Protein Electrophoresis of Apparently Healthy Adults in Addis Ababa, Ethiopia

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Abstract : Background: Even though several factors affect reference intervals (RIs), the company-derived values are currently in use in many laboratories worldwide. However, little or no data is available regarding serum protein RIs, mainly in resource-limited setting countries like Ethiopia. Objective: To establish a reference interval for serum protein electrophoresis of apparently healthy adults in Addis Ababa, Ethiopia. Method: A cross-sectional study was conducted on a total of 297 apparently healthy adults from April-October 2019 in four selected sub-cities (Akaki, Kirkos, Arada, Yeka) of Addis Ababa, Ethiopia. Laboratory analysis of collected samples was performed using Capillarys 2 Flex Piercing analyzer, while statistical analysis was done using SPSS version 23 and med-cal software. Mann-Whitney test was used to check Partitions. Non-parametric method of reference range establishment was performed as per CLSI guideline EP28A3C. Result: The established RIs were: Albumin 53.83-64.59%, 52.24-63.55%; Alpha-1 globulin 3.04-5.40%, 3.44-5.60%; Alpha-2 globulin 8.0-12.67%, 8.44-12.87%; and Beta-1 globulin 5.01-7.38%, 5.14-7.86%. Moreover, Albumin to globulin ratio was 1.16-1.8, 1.09-1.74 for males and females, respectively. The combined RIs for Beta-2 globulin and Gamma globulin were 2.54-4.90% and 12.40-21.66%, respectively. Conclusion: The established reference interval for serum protein fractions revealed gender-specific differences except for Beta-2 globulin and Gamma globulin.

Keywords : serum protein electrophoresis, reference interval, Addis Ababa, Ethiopia

Conference Title : ICCPDTT 2022 : International Conference on Clinical Pathology, Diagnostic Techniques and Testing

Conference Location : Boston, United States

Conference Dates : April 21-22, 2022