

Determination of Community Based Reference Interval of Aspartate Aminotransferase to Platelet Ratio Index (APRI) among Healthy Populations in Mekelle City Tigray, Northern Ethiopia

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Abstract : Background: Aspartate aminotransferase to Platelet Ratio Index (APRI) currently becomes a biomarker for screening liver fibrosis since liver biopsy procedure is invasive and variation in pathological interpretation. Clinical Laboratory Standard Institute recommends establishing age, sex and environment specific reference interval for biomarkers in a homogenous population. The current study was aimed to derive community based reference interval of APRI aged between 12 and 60 years old in Mekelle city Tigray, Northern Ethiopia. Method: Six hundred eighty eight study participants were collected from three districts in Mekelle city. The 3 districts were selected through random sampling technique and sample size to kebelles (small administration) were distributed proportional to household number in each district. Lottery method was used at household level if more than 2 study participants to each age partition were found. A community based cross sectional in a total of 534 study participants, 264 male and 270 females, were included in the final laboratory and data analysis but around 154 study participants were excluded through exclusion criteria. Aspartate aminotransferase was analyzed through Biosystem chemistry analyzer and Sysmix machine was used to analyze platelet. Man Whitney U test non parametric statistical tool was used to appreciate statistical difference among gender after excluding the outliers through Box and Whisker. Result: The study appreciated statistical difference among gender for APRI reference interval. The combined, male and female reference interval in the current study was 0.098-0.390, 0.133-0.428 and 0.090-0.319 respectively. The upper and lower reference interval of males was higher than females in all age partition and there was no statistical difference (p-value (<0.05)) between age partition. Conclusion: The current study showed using sex specific reference interval is significant to APRI biomarker in clinical practice for result interpretation.

Keywords : reference interval, aspartate aminotransferase to platelet ratio Index, Ethiopia, tigray

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