00508 Reference Interval for Total Bile Acids on Abbott Architect c8000 Analyser

Setoh Weng Sung, Clement Ho, Timothy Low
KK Women's & Children's Hospital

Aims: Bile acids are synthesised in the liver from cholesterol and secreted into bile. The latter is stored in the gall bladder, which discharges bile acids into the small intestine usually after a meal to facilitate digestion and absorption of lipids. Bile acids can also bind to nuclear receptors to modulate expression of proteins involved in cholesterol homeostasis.

The concentration of total bile acids in blood can serve as a biomarker of liver function. Serum levels of bile acids are increased in many liver diseases including cholestasis, hepatitis and cirrhosis.

One main clinical indication for performing this test is in pregnant women presenting with generalised or localised skin itching (pruritus). Obstetric cholestasis is a cause of pruritus. In such patients, serum levels of bile acids can be elevated and a serum liver function panel should be requested.

In this study, we aimed to establish the reference interval for total bile acids assay on an Abbott Architect c8000 analyzer.

Methodology: A total of 148 residual serum samples from women between 10 to 12 weeks of gestation were used. In order to exclude underlying liver disorders, all samples were screened for alkaline phosphatase, alanine aminotransferase, gamma-glutamyl transferase and total bilirubin prior to testing for total bile acids. The results were analysed using the Microsoft Excel and Analyse-It softwares.

Result: Serum total bile acids levels in these women were found to be normally distributed. The mean total bile acids level was 5.9 umol/L with 95% confidence interval of 5.3 to 6.4 umol/L. The 5th percentile and 95th percentile were determined to be 2.0 and 11.9 umol/L respectively.

Conclusion: We have established the 95th percentile from the data analysis as the upper limit of the reference interval for total bile acids i.e. < 12 umol/L for female patients in the first-trimester.