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Abstract

Background: Beta-2 microglobulin (B2M) is responsible for transmission of peptide antigens on the surface of cells as part of HLA complex. Normal serum levels are less than 3µg/ml. It increases in inflammatory & malignant conditions including HCV infection**. Aim**: Determining the concentration of serum B2M Levels in patients with HCV related chronic hepatitis, cirrhosis, and hepatocellular carcinoma and correlate the results with clinical parameters for disease progression. **Patients and methods**: In this analytical cross sectional study 92 participants were included in 4 equal groups :Group(1) non cirrhotic chronic HCV , Group (2):HCV related liver cirrhosis , Group(3): HCC on top of HCV, Group (4): healthy Controls. History taking, clinical examination ,routine labs ,& US were done to all patients .Group specific inclusion criteria: PCR ,Metavir score for group (1) patients . CT & AFP for Group (3) patients. B2M levels were measured in serum by ELISA. Quantitative variables presented by number and percent were compared by chi-square or Fisher's exact test. **Results**: The mean serum B2M level of Group (1) was (4.25±1.48) µg/ml., Group (2) was (7.48 ±3.04) µg/ml, Group (3) was (6.62 ±2.49) µg/ml, Group (4) was (1.62 ±0.63) µg/ml. Serum B2M levels were significantly higher in diseased than control group ($p< 0.01$)being significantly higher in Cirrhosis (7.48±3.04) and HCC groups (6.62±2.49) than HCV group (4.25±1.48) ($p<0.01$). There was a significant correlation between B2M Level and ALK , total & direct bilirubin & INR($p<0.05$),and a significant inverse correlation

between B2M level and Albumin, Total proteins ,HB,WBCS values ($p < 0.05$). There was no significant correlation between B2M level and viral load or Metavir & MELD Score, tumor size or AFP ($p > 0.05$). The best cutoff for B2M was 4.55 with sensitivity 74%,& negative predictive values of 87.8% (p value<0.01) . The sensitivity of the test increased upon B2M & AFP combined estimation to 91%, Specificity to 91% and accuracy to 83%.

Conclusion: Serum B2M level is elevated in HCV chronic liver diseases and may be used as a marker of disease progression in patients with Hepatitis C related Liver Diseases.

Keywords:

- Serum B2M
- HCC
- HCV Progression
- HCV Marker.