To Explore the Role of Non-invasive Serum Biomarker: CK-18 in Non-Alcoholic Fatty Liver Disease (NAFLD) Severity

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Abstract:

Background: Non-alcoholic fatty liver disease (NAFLD), a liver pandemic of the 21st century, impacts nearly 30% of the population worldwide. It is a disorder, comprising a spectrum ranging from non-alcoholic fatty liver (NAFL) to non-alcoholic steatohepatitis (NASH), consequently progressing to liver cirrhosis and cancer (HCC). Though, liver biopsy still remains the gold standard for diagnosing nonalcoholic steatohepatitis (NASH), but with certain limitations. Thus, there is an urgent need to explore certain key noninvasive biomarkers like Cytokeratin-18 (CK-18), a known marker of hepatocyte apoptosis in evaluating disease severity, liver injury, and metabolic stress.

Methodology: This cross-sectional study was conducted, enrolling 168 ultrasonographically confirmed (Age: 35-55 years) NAFLD patients: Grade1: 84 patients and Grade2: 84 patients. CK-18 levels were measured by enzyme-linked immunosorbent assay (ELISA). Statistical analysis was performed to find any correlation of serum CK-18 levels with NAFLD severity.

Results: The serum CK-18 levels were found to be significantly raised ($p<0.001$) in group 2 patients w.r.t group 1 subjects. However, there was no significant correlation between CK-18 and metabolic syndrome (MetS). Also the area under curve receiver operating characteristics (AUROC) analysis showed that measurement of CK-18 (area=0.68, $p<0.001$) might have a good diagnostic ability in assessing the severity of NAFLD.

Clinical Relevance: Our findings indicated that non-invasive serum biomarker CK-18 might act as potential diagnostic and therapeutic target in monitoring and predicting the severity of NAFLD.

Keywords:
NAFLD, NAFL, NASH, HCC, CK-18.