



ABSTRACTS: VOLUME 8, SPECIAL ISSUE {8th Undergraduate Conference}

ASSOCIATION BETWEEN SERUM URIC ACID TO CREATININE RATIO AND METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE (MASLD) AMONG ADULTS IN THE WEST BANK.

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Abstract

Background: Metabolic dysfunction-associated steatotic liver disease (MASLD), formerly known as non-alcoholic fatty liver disease, is mostly associated with obesity, insulin resistance, and metabolic syndrome. Uric acid has been known to be linked to metabolic disorders through pathways related to oxidative stress and inflammation. However, renal function may have an impact on its therapeutic usefulness. Moreover, serum creatinine, which is a marker of renal function, may alter the role and interpretation of uric acid levels. The increased serum uric acid to creatinine ratio (SUA/SCr) has been reported as a more accurate metabolic disorder biomarker since it integrates the combined manifestations of serum uric acid and creatinine. However, the exact representation for MASLD based on the correlation with SUA/SCr in Palestine has not been reported yet. And so, the aim of this research is to assess the relationship between MASLD and its severity and uric acid, creatinine, and the uric acid-to-creatinine ratio (UA/Cre) among Palestinian MASLD patients.

Objectives: To evaluate the association between the serum uric acid to creatinine ratio (SUA/SCr) and the presence of metabolic dysfunction-associated steatotic liver disease (MASLD) among adults in the West Bank, Palestine.

Methods: A retrospective cross-sectional study was conducted to investigate the association between SUA/SCr ratio and MASLD. Moreover, clinical data for adult participants with available biochemical and clinical data were collected, classified, and managed confidentially. Only patients with complete data were included in this study. Descriptive as well as analytical analyses were carried out with the help of SPSS (V.25) software.

Results: A total of 100 patients with the mean age of 56.4±13.8 years old were recruited for this study, out of whom 56% are females. The study population's mean blood uric acid level was 6.20 ± 1.71 mg/dL, suggesting a little overall rise. While the dataset contained outliers, as seen by the large fluctuation in the mean serum creatinine level of 1.07 ± 1.13 mg/dL. The SUA/SCr ratio was found to be significantly associated with MASLD (OR = 1.39, p = 0.039) based on the multivariate logistic regression analysis. However, the individual correlations between uric acid and MASLD and creatinine and MASLD were not



statistically significant ($p = 0.448$ and 0.075 , respectively). Furthermore, statistical analyses have revealed no gender-based correlation was there ($p = 0.253$).

Conclusion: Based on the manifestation in this study, serum uric acid and serum creatinine by themselves did not substantially correlate with MASLD. However, the SUA/SCr has emerged as an independent predictor, indicating that the combination of renal and metabolic characteristics offers superior disease discrimination compared to either variable alone in the Palestinian population.

Key words: Fatty liver, Metabolic Dysfunction Associated Steatotic Liver Disease, MASLD, Serum Uric Acid to Serum Creatinine Ratio, SUA/SCr.