

ROLE OF NEUTROPHIL TO LYMPHOCYTE RATIO (NLR) AND C - REACTIVE PROTEIN TO ALBUMIN RATIO (CAR) AS EARLY PREDICTORS OF SEVERITY IN ACUTE PANCREATITIS

MOHAMMAD GOLAM AZAM¹, NIKHIL CHANDRA ROY²

¹Associate Professor, Dept of Gastrointestinal, Hepatobiliary and Pancreatic Disorders (GHPD), BIRDEM, Shahbagh, Dhaka. drgolamazam@gmail.com. ²Junior Consultant, BIHS Hospital, Dhaka

Background: Acute pancreatitis (AP) is a life-threatening disease caused by a variety of factors, and once it progresses to severe acute pancreatitis, the prognosis is poor. Different modalities are available for predicting severity in acute pancreatitis. A single, cheap, widely available marker with high sensitivity and specificity is yet to be identified. The present study was aimed to determine the relation of the neutrophil-lymphocyte ratio (NLR) and CRP-Albumin ratio (CAR) in early prediction of severity in acute pancreatitis.

Methods: This cross-sectional study was conducted at the Department of Gastrointestinal, Hepatobiliary and Pancreatic Disorders (GHPD), BIRDEM General Hospital, Shahbagh, Dhaka, Bangladesh, from April, 2020 to March, 2022. Diagnosis of acute pancreatitis was made by clinical findings, serum amylase and lipase levels (>3 times the upper limit of normal values), evidences of acute pancreatitis by ultrasonography and computed tomography (CT). Severity of acute pancreatitis was classified according to the revised version of Atlanta classification. Data collection was done through a structured questionnaire. Data were analyzed by SPSS 23. Receiver operating characteristic (ROC) curve was constructed to estimate the sensitivity and specificity of NLR and CAR. **Results:** A total of 120 patients with acute pancreatitis were enrolled in this study. Age of the patients was 45.20±13.93 (mean ±SD) years, male predominance was observed (54.2%). Majority of the cases were mild 52.5% (n=63) compared to moderate 28.3% (n=34) and severe 19.2% (n=23). The NLR was 6.63±3.344 (Mean±SD) with a range of 1.32 to 18.75. The CAR was 3.20±2.23 (Mean ±SD) with range of 0.14-7.20. The area under the curve (AUC) of NLR and CAR were 0.865 and 0.949 for severity of AP respectively. Sensitivity, specificity, PPV, NPV and accuracy of NLR at cut-off e^{5.72} were 80.7%, 76.2%, 75.4%, 81.4% & 78.3% and that of CAR at cut-off e^{2.07} were 96.5%, 76.2%, 78.6%, 96.0% & 85.8%. **Conclusion:** This study revealed that NLR and CAR are good predictors in the assessment of severity of AP. These easily accessible and low-cost inflammatory markers can be used for the management of acute pancreatitis.

Keywords: Neutrophil to Lymphocyte Ratio (NLR), C - reactive protein to Albumin Ratio (CAR), Early Predictors, Acute Pancreatitis

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