ABSTRACT

The Prognostic significance of Red cell distribution width (RDW) and Neutrophil–Lymphocyte Ratio (NLR) in Acute Pancreatitis: Identification of an Optimal values

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Introduction:

Acute pancreatitis is usually a self-limiting process; however, 25% of patients present with or subsequently develop a severe form of the disease that is associated with a mortality of up to 50 %.

Aim of the available Scoring system is to stratify the severity of the Acute Pancreatitis, and this in turn guides the management with improving outcomes. Currently available scoring system for assessment of Acute Pancreatitis is the Acute Physiology and Chronic Health Evaluation (APACHE II) & Sequential Organ Failure Assessment (SOFA) are suitable only in the intensive care setting and not for routine use in all patients presenting with Acute Pancreatitis.

AIMS AND OBJECTIVES

To investigate the validity of RDW and NLR in predicting outcome, and to determine an optimal cut-off value that would allow division of patients into mild (MAP) and severe acute pancreatitis (SAP) groups based on NLRs & RDW within the first 48 h of hospitalization

MATERIALS AND METHODS

This study is to be conducted among 30 patients with acute pancreatitis attending the Department of Medicine & Department of Medical gastroenterology, Govt. Rajaji Hospital, Madurai.

DESIGN OF STUDY:

Prospective analytical study

PERIOD OF STUDY:

5 Months.

RESULT

- Age and sex distribution of the population in our study shows 26.7% of the study subjects were in the age group of 25-35years, 46.6% were in the age group of 36-45yrs, 26.7% were in the age group of 46-55 years.
- All of the study subjects were males (100%). In our study about 73.3 % of the study subjects were classified as mild acute pancreatitis while 26.7% were developed complications, so called severe acute pancreatitis.
- Among the severe acute pancreatitis group, about 37.5% of study groups developed pseudocyst of pancreas, 25% of patients developed pancreatic necrosis, 25 % developed acute renal failure and remaining 12.5% developed multi organ dysfunction syndrome.

- By observing RDW, no significant change in values on 0, 24 & 48 hrs in both acute and chronic pancreatitis.

  But there is significant change observed in between acute & chronic pancreatitis; that is rise in RDW observed in severe acute pancreatitis. This change is more significant in 0 hr & 24 hrs than 48 hrs.
- By observing NLR, there is significant change observed in between acute & chronic pancreatitis; that is rise in NLR observed in severe acute pancreatitis. This change is more significant in 0 hr & 24 hrs than 48 hrs. Similarly NLR ratio is higher than the normal population in acute pancreatitis; more significant rise observed in initial presentation than in 24 & 48 hours.
- In addition, ***optimal cut-off RDW value of 15.2 on admission and 15.5 at 24 hours are predict severe acute pancreatitis. Similarly optimal neutrophil lymphocyte ratio (NLR) of 10.5 on admission 9.1 at 24 hours also indicate severe acute pancreatitis.***
- These results indicate that NLR & RDW is convenient, economic, and sensitive monitoring method for helping clinicians predict complications in AP patients.

CONCLUSION

Aim of this study is to optimize the RDW & NLR and investigate if incorporation in to current Acute Pancreatitis prognostic scoring systems increases the accuracy of current methods.

Finally In this study we evaluated the ability of RDW & NLR values predicting the outcome of acute pancreatitis and found that NLR is more valuable than RDW; both are important prognostic marker in acute pancreatitis patients. Increased RDW can be used as a new indicator of mortality in patients with acute pancreatitis

So NLR & RDW values in combination with other scoring systems will be useful for properly evaluating & predicting the severity of acute pancreatitis.

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