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Red Cell Distribution Width To Platelet Ratio (Rpr)As A Prognostic Marker In Acute Pancreatitis

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I. Introduction:

In Acute pancreatitis is an acute inflammatory disease and one of the most GI causes of hospital admission.In early phase, there is dominant Systemic Inflammatory Response Syndrome (SIRS) leading to multi organ failure. In late phase, counter inflammatory reactions predominate to septiccomplications.

In SIRS, because of inflammatory cytokines, there is increase in red cell distribution width due to release of premature RBC and also platelet count decreases.

As a result, there will be an raised RPR, which can be used as prognostic marker to know degree of severity and outcome in Acute pancreatitis.

Aim: To study red cell distribution width to platelet ratio as a prognostic marker in acute pancreatitis.

II. Materials and Methods:

A total of 40 patients were included in this prospective study done at Government sidhartha medical college and hospital , Vijayawada between 2021 January to 2022 December.

Inclusion Criteria:

1. Patients presented with pain abdomen
2. Patients with three-fold or greater rise in serum amylase or lipase
3. 3. Patient with characteristic findings of acute pancreatitis on CT/ MRI

Exclusion Criteria:

1. Patients of age less than 18 years
2. Patients presenting to hospital after 48 hours of onset of symptoms
3. Patients with trauma induced pancreatitis
4. Patients with Chronic pancreatitis

An automated coulter counter S Model was used to calculate RPR. Severity of acute pancreatitis is defined according to revised Atlanta criteria.

Methodology

Between January 2021 and December 2022,60 patients with acute pancreatitis were taken to study.In this retrospective cohort study,for all subjects, demographic data in hospital admission, etiology,co morbid conditions,labarotory parameters and length of hospital stay were examined.we used non invasive methods along with RPR to evaluate the severity of disease.

III. Results:

A total of 60 patients were included in the study out of which 54 were male and 6 were female. 48 patients were cured of disease and 12 were expired. The mean value of RPR in survivors is 0.04 whereas in non-survivors it is 0.09. The RPR Obtained on hospital admission was persistently higher among non survivors than among survivors.

The RPR value obtained at the time of hospital admission is persistently higher among non survivors than survivors. RDW and RPR were presented as independent and significant variables on admission to predict mortality.

IV. Discussion :

Although a majority of patients with acute pancreatitis have a mild course disease, severe forms

require more attention because of its high morbid and mortality(rate of mortality around 22%).The RDW an index of variability of erythrocyte size, reported as a predictor of mortality.The half life of RBC is higher than others like albumin,bilirubin; therefore RDW represented as more stable index.proinflammatory cytokines of sepsis effect the RDW and also coagulation abnormalities.In an recent study the RPR to predict hepatic fibrosis in patients with chronic hepatitis B.In some studies says increased RDW is independent with RPR.BUT In our study,we found that if RPR used in clinical practice with the accompanying assessments,it could be a useful and important marker for predicting the mortality of patients with acute pancreatitis.

V. Conclusion:

RPR can be used as an effective biomarker in predicting the outcome in patients with acutepancreatitis.

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