PRESTON SCORE: A PREDICTIVE SCORING SYSTEM TO PREDICT ONCOLOGICAL OUTCOMES FOR LOCALLY ADVANCED RECTAL CANCER CASES

Introduction:
Locally advanced rectal cancer (LARC) is associated with high recurrence rates and poor survival outcomes. Preoperative inflammation markers have been shown to correlate with survival in various cancers, including LARC. Identifying patients with a higher risk of recurrence based on these markers could guide treatment and surveillance strategies. This study aimed to develop a scoring system based on pre-treatment inflammatory markers to predict survival outcomes in LARC patients. This system may help in tailoring postoperative surveillance and evaluating the need for aggressive neoadjuvant treatment.

Procedure:
We retrospectively analyzed LARC patients to assess the correlation between pretreatment inflammatory markers and survival outcomes. Four pre-treatment indicators were selected based on their known association with inflammation and cancer prognosis: neutrophil-to-lymphocyte ratio (N:L), platelet count, albumin levels, and ferritin levels. A scoring system was developed where each patient received 1 point for having the following indicators: N:L ratio >3.5, platelet count >440 × 10^9/L, albumin <35 g/L, and ferritin <20 μg/L. A total score ranging from 0 to 4 was calculated for each patient. Patients were then stratified into different risk categories, and their survival outcomes were analyzed using Kaplan-Meier survival analysis and Cox proportional hazards models.

Results:
There was a total of 70 cases, M:F ratio of 1:1 and median age was 60.1 years. Patients with higher scores on the pretreatment inflammatory markers showed a significant correlation with worse survival outcomes. Specifically, patients with a score of 2 (8.2%; n=5) or higher demonstrated a markedly increased risk of recurrence and decreased overall survival compared to those with a score of 0 or 1.

Conclusion:
Our scoring system based on pretreatment inflammatory markers (N:L ratio, platelet count, albumin, and ferritin) effectively identifies LARC patients with a higher risk of poor survival outcomes. This scoring system was found to be an independent predictor of survival, even when controlling for other clinical factors. Patients with higher scores may benefit from more aggressive neoadjuvant treatment and closer postoperative surveillance. Further research could explore how different chemotherapy regimens affect survival outcomes in patients with varying scores, particularly comparing long-course versus short-course treatment and optimizing treatment strategies further.