



Neutrophil-to-Lymphocyte Ratio: Correlation with Length of Hospital Stay in Children with Acute Appendicitis

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To the Editor: Neutrophil-to-lymphocyte ratio (NLR) is currently considered as a marker of subclinical inflammation, which is easily calculated from the differential white cell count [1]. Several studies have revealed that NLR can be considered as an important parameter in early preoperative diagnosis and prognosis of acute appendicitis in children [2], becoming a true reflection of the magnitude of the underlying systemic inflammation [3].

In this context, we analyzed the association between preoperative NLR and length of hospital stay (LOS) in these patients. We conducted a preliminary retrospective study in children under 18 y who underwent appendectomy in our institution between 2017-2020. We compared quantitative data such as time since symptoms onset, ultrasound appendiceal diameter and laboratory tests at admission, which included leucocyte count, neutrophil count, NLR and C-reactive protein. Pearson correlation test and linear regression analysis were used to evaluate the correlations between LOS and the different parameters were analyzed. We excluded intraoperative data such as appendicitis type (complicated or uncomplicated), to assess the preoperative prediction of values at diagnosis, independently of the intraoperative finding of the type of appendicitis.

We included a total of 1,214 patients (765 males; 449 females). When analyzing the linear regression between quantitative parameters and LOS, we found that NLR had

the highest correlation ($r = 0.735$; $p < 0.001$). C-reactive protein presented a moderate correlation ($r = 0.412$), while the rest of the parameters presented a weak correlation or were not correlated.

In light of these results obtained, we could suggest that the NLR value at diagnosis may have a strong positive correlation with LOS after appendectomy in children. Its clinical application could lead to preventive actions in patients at high risk of prolonged LOS, such as a broader spectrum antibiotic protocol, or even to consider hospital-at-home care [4]. However, these results are still preliminary, and should be contrasted with future studies.

Declarations

Conflict of Interest None.

References

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