

15.50-15.55 LG13 (SO): DIAGNOSTIC ACCURACY OF MULTIPLE BIOMARKERS IN PREDICTING THE SEVERITY OF ACUTE PEDIATRIC APPENDICITIS IN THE EMERGENCY DEPARTMENT

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Aim of the study

Since acute appendicitis (AA) in children can be treated differently according to the severity of the disease, we investigated whether the combined diagnostic model of interleukin-6 (IL-6), leucine-rich alpha-2 glycoprotein 1 (LRG1), neutrophil gelatinase-associated lipocalin (NGAL) could distinguish between acute uncomplicated appendicitis (AuA) and acute complicated appendicitis (AcA) and a control group (Ctr).

Materials and Methods

In this prospective single-centered cohort study, biomarkers in serum were assayed preoperatively. Children aged seven to 18 years old were divided into three groups: AcA, AuA, and Ctr. The Ctr included patients without inflammatory processes. The predictive values were evaluated by receiver operating characteristics curve (ROC) and binary logistic regression models. Two different models were analyzed – AA vs Ctr and AcA vs AuA.

Results

A total of 153 participants were enrolled, including AcA (n = 52), AuA (n = 45) and Ctr (n = 56). The ROC curve showed that combined diagnostic model AA vs Ctr reached a sensitivity of 92.8 %, a specificity of 89.3 % and an area under the curve of 0.96 (95% CI 0.93-0.99, p<0.001). The ROC curve showed that combined diagnostic model AcA vs AuA reached a sensitivity of 67,3 %, a specificity of 77,8 % and an area under the curve of 0.74 (95% CI 0.63-0.84, p<0.001).

Conclusion

The combined diagnostic model of IL-6, LRG1, NGAL at the emergency department (ED) may provide a new approach for the differentiating between AA as opposed to other causes of abdominal pain, and for the possible diagnoses of AcA and AuA.