AB204. 171. Construction of a novel clinico-biochemical score outperforms Alvarado score in diagnosis of appendicitis

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Background: Diagnosis of acute appendicitis (AA) remains challenging. We have previously shown that circulating fibrocytes (CFs) are elevated in AA. This study aimed to construct a novel clinico-biochemical scoring system and compare its diagnostic accuracy to Alvarado score in diagnosing acute appendicitis.

Methods: Eighty consecutive adult patients with right iliac fossa (RIF) pain were recruited in a cohort-based study between 10th June 2015 and 14th February 2016, at University Hospital Limerick. The novel score was constructed using clinical and biochemical (CFs, CRP, WCC and NLR) parameters. Patients were categorized into three groups (high, moderate and low probability) based on the clinico-biochemical parameters and correlated with the final diagnosis which was determined by histopathology. Diagnostic accuracy of both systems was assessed using the area under the curve (AUC).

Results: Thirty-four (42.5%) patients had a histologically confirmed appendicitis. Eighteen (72%) out of 25 patients assigned to high probability group using the novel score were correctly diagnosed with appendicitis. The sensitivity and specificity of high probability group for the novel and Alvarado scores were 72.0% and 80.0% *vs.* 68.1% and 82.3% respectively. Seven (20%) out of 35 patients in low-probability group of both scoring systems had an inflamed appendix (i.e., false positive results). The novel score had a better diagnostic accuracy for appendicitis than Alvarado score (AUC; 0.77 and 0.73 respectively).

Conclusions: The novel clinico-biochemical scoring system generated using circulating fibrocytes, white cell counts, NLR as well as CRP, in addition to the clinical picture of patients had a greater diagnostic accuracy in appendicitis compared with Alvarado scoring system.

Keywords: Appendicitis; scoring system; prediction