

## AB075. 242. Comprehensive evaluation of a novel biomarker and other biomarkers for appendicitis in adults

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**Background:** Accurate diagnostic biomarkers for acute appendicitis (AA) are lacking. Circulating fibrocytes (CFs) are increased in inflammatory states and have not previously been studied in appendicitis. This study aimed to assess if CF levels are altered in AA, and compared their diagnostic accuracy with white cell count (WCC), C-reactive protein (CRP), neutrophils, lymphocytes, neutrophil-lymphocyte ratio (NLR), monocytes, basophils and eosinophils in the diagnosis of AA in patients presenting with right iliac fossa pain (RIFP).

**Methods:** A prospective cohort study was carried out between June 2015 and February 2016 at University Hospital Limerick and 95 adults were recruited. Of these, 15 were healthy individuals and 80 were patients admitted with RIFP. Clinical, biochemical and histopathological

parameters were recorded. CF levels were determined by dual-staining for CD45 and Col-1 using Fluorescence-Activated Cell Sorting (FACS) and correlated with histopathological diagnoses. A P value of <0.05 was taken as clinically significant.

**Results:** Forty-six of the 80 patients admitted with RIFP underwent appendectomy, 74% of whom subsequently had histologically confirmed appendicitis. The median levels were significantly elevated in patients with histologically confirmed appendicitis compared with those who had a histologically normal appendix [6.0% (10.1%) *vs.* 1.7% (2.4%),  $P < 0.01$ ]. The diagnostic accuracy of CF in differentiating AA from other causes of RIFP was better than that of the WCC, CRP, neutrophils, NLR and monocytes as reflected in areas under the curve (AUC) of 0.70, 0.68, 0.65, 0.69, 0.69 and 0.67 respectively.

**Conclusions:** Circulating fibrocyte levels are elevated in AA and are a more sensitive diagnostic biomarker in this study than the commonly used WCC and CRP levels. The use of CF levels in clinical practice should be further explored in order to potentially reduce the negative appendectomy rate in patients presenting with RIFP.

**Keywords:** Trainee; isolated lung perfusion; transplant

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