



AB078. Circulating fibrocytes are predictors of acute appendicitis in adult patients

Mohamed Awad Zarog, Donal Peter O'Leary, Miranda Kiernan, Jarlath Bolger, Paul Tibbitts, Colin Peirce, Gerard John Byrnes, John Calvin Coffey

Department of Surgery, University Hospital Limerick, Dooradoyle, Limerick, Ireland

Background: Improved diagnostic biomarkers are required for acute appendicitis (AA). A recent publication by right iliac fossa pain treatment (RIFT) study group has demonstrated that predictors for appendicitis are lacking. Circulating fibrocyte percentage (CFP) is increased in inflammatory states but has not been studied in acute appendicitis. This study aimed to determine CFP in AA, compare diagnostic accuracy of CFP with standard serological biomarkers and identifying predictors of AA.

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 had right iliac fossa pain at presentation. The CF percentage was determined by dual-staining peripheral venous samples for CD45 and Col-1 using fluorescence-activated cell sorting and

correlated with histopathological diagnoses. The accuracy of CFP in determining histological acute appendicitis, was characterised and compared with other biomarkers. A P value of <0.05 was taken as clinically significant.

Results: Forty-six of the 80 patients admitted with right iliac fossa pain underwent appendectomy. Among these, 74% (N=34) had histologically confirmed appendicitis. The CF percentage was statistically greater in patients with pathologically proven acute appendicitis compared with healthy controls (median =6.0, IQR =9.9; median =2.2, IQR =2.5 respectively; P value =0.01). The diagnostic accuracy of CFP, as determined using the area under the curve, was similar to that of standard serological biomarkers. On multi-nominal regression analysis, only elevated CFP was retained as an independent prognostic determinant of acute appendicitis (P value =0.03; odds ratio 0.66).

Conclusions: Circulating fibrocyte percentage is elevated in histological acute appendicitis and is equally accurate as standard serological biomarkers in terms of diagnosis. However, the percentage circulating fibrocyte was the only serological biomarker predictive of acute appendicitis on multinomial logistic regression.

Keywords: Appendicitis; fibrocyte; biomarker

doi: 10.21037/map.2020.AB078

Cite this abstract as: Zarog MA, O'Leary DP, Kiernan M, Bolger J, Tibbitts P, Peirce C, Byrnes GJ, Coffey JC. Circulating fibrocytes are predictors of acute appendicitis in adult patients. *Mesentery Peritoneum* 2020;4:AB078.