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ABSTRACTS

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ACCURACY OF FECAL CALPROTECTIN, BOWEL ULTRASONOGRAPHY AND INFLAMMATORY INDEXES IN THE DIAGNOSIS OF PAEDIATRIC INFLAMMATORY BOWEL DISEASE

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Objectives and Study: To assess the accuracy of non invasive parameters including fecal calprotectin (FC), bowel ultrasound wall thickening (BWT) and blood inflammatory indexes (BII) alone or in combination as a diagnostic tool for paediatric inflammatory bowel disease (IBD).

Methods: Subjects aged 2-18 years referred to our paediatric gastroenterology clinic from 2007 to 2013 for recurrent abdominal pain and/or altered bowel habits were retrospectively considered. Subjects who underwent laboratory tests (FC, BII: white blood cell count [WBC], C-reactive protein [CRP], erythrocyte sedimentation rate [ESR]) and bowel ultrasound as initial assessment were eligible. Exclusion criteria were: signs or symptoms highly suggestive for IBD (perianal disease or haematochezia), known organic disease, previously performed endoscopy. Eligible patients were followed-up for one year.

Results: Seventy-seven patients (mean age 11.3, 44 males) were retrospectively included. One-year diagnoses were: 23 (29.9%) IBD (8 ulcerative colitis, 12 Crohn's disease 3 indeterminate colitis), 54 (70.1%) non-IBD diseases. Mean values of WBC, CRP, ESR ($p < 0.001$) and at least one BII pathological value were higher in IBD vs non-IBD patients (65.2% vs 11.1%, $p < 0.001$). Pathological BWT (> 3 mm) and FC (> 200 $\mu\text{g/g}$) were more frequent in IBD than in non-IBD patients (69.6% vs 3.7%, $p < 0.001$ and 95.7% vs 27.8%, $p < 0.001$ respectively). Considering 3 (BII + FC + BWT) or 2 parameters together (FC + BWT, FC + BII) IBD patients had more simultaneous pathological results than non IBD-patients (52.2% vs 0%, $p < 0.001$; 69.6% vs 0%, $p < 0.001$; 65.2% vs 3.7%, $p < 0.001$ respectively). Diagnostic accuracy of considered parameters are described in table 1.

Variables	Se, % (95% CI)	Sp, % (95% CI)	PPV, % (95% CI)	NPV, % (95% CI)
BII (at least one altered)	65.2 (45.8-84.7)	88.9 (80.5-97.3)	71.4 (52.1-90.7)	85.7 (76.5-94.9)
BWT (> 3 mm)	69.6 (50.7-88.4)	96.3 (91.3-100)	88.9 (74.4-100)	88.1 (80.0-96.4)
FC (> 200 $\mu\text{g/g}$)	95.6 (87.3-100)	72.2 (60.3-84.2)	59.5 (43.6-75.3)	67.5 (52.7-81.1)
FC + BWT + BII	52.2 (31.8-70.6)	100	100	83.1 (74.0-91.2)

	72.6)			92.2)
FC + BWT	69.6 (50.7-88.4)	100	100	88.5 (80.5-96.5)
FC + BII	65.2 (45.8-84.7)	96.3 (91.3-100)	88.2 (73.0-100)	86.7 (78.1-95.3)

Table 1. Se = sensitivity. Sp= specificity, PPV= positive predictive values, NPV= negative predictive values.

Conclusion: In initial work-up for IBD, FC alone presents highest sensitivity but poor specificity. The combination of FC + BWT presents the highest accuracy in identification of patients needing further invasive procedures in the short term.

Disclosure of Interest: None Declared