Both the standard and a modified capsule endoscopy Lewis score of inflammation correlates with faecal calprotectin and small bowel transit time

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Background: Small bowel video capsule endoscopy (VCE) is an established tool for the non-invasive examination of the small bowel mucosa. It is a useful adjunct for the assessment of small bowel inflammation in patients with suspected or established Crohn’s disease. The Lewis score (LS) is a validated semi-quantitative system used to assess the burden of small bowel inflammation seen at VCE.1 The score is calculated by adding the score for the most severely inflamed tertile (vilious oedema and ulceration) to a score for any stenosis in the small bowel. A modified Lewis Score (mLS) incorporating a summation of scores for all three small bowel tertiles has been suggested as being more representative of the burden of inflammation.2 Previous studies have suggested that inflammation may affect the speed of small bowel transit. Hypotheses: 1. Biological markers of inflammation (CRP and calprotectin) correlate with objective measures of inflammation as detected at VCE. 2. A modified LS (mLS) would be expected to correlate more reliably with biological markers of inflammation than the standard Lewis score. 3. Small bowel transit time negative correlates with the degree of inflammation. Aim: To assess the degree to which small bowel inflammation detected at capsule endoscopy correlates with inflammatory biomarkers and intestinal transit time in patients undergoing VCE.

Methods: A retrospective single-centre review of records of consecutive patients attending for VCE between November 2014 and Sept 2016 at a tertiary referral hospital was performed. Data on biomarkers of inflammation processed within 3 months of the VCE were collected. Statistics: The normality of data was assessed using the Shapiro–Wilk test statistic. Correlation was assessed using the Spearman’s rank correlation for non-parametric data (2-tailed sig.)

Results: VCE data from 286 consecutive patients were collated. Both LS and MLS correlated moderately with faecal calprotectin, with a numerically higher correlation for mLS ($r = 0.379$ ($p = 0.032$) and $r = 0.429$ ($p = 0.014$), respectively). Neither LS nor mLS showed a significant correlation with CRP ($r = 0.313$ ($p = 0.06$) and $r = 0.277$ ($p = 0.096$)). LS weakly correlates with small bowel transit time ($r = 0.255$ ($p = 0.05$)).

Conclusions: Faecal calprotectin, but not CRP correlates with objective assessment of small bowel inflammation as assessed at VCE. A modified Lewis score, incorporating a summation of inflammatory scores for all of three small bowel tertiles more strongly correlates with faecal calprotectin. Small bowel inflammation is associated with a slower small bowel transit time.

References

Upper GI endoscopy is an expensive accessory investigation in the diagnosis of Crohn’s disease in children

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Background: ESPGHAN Porto revised criteria recommends upper gastrointestinal endoscopy (OGD) and ileo-colonoscopy with small bowel imaging for all suspected patients with Crohn’s disease (CD). OGD is recommended with an aim to improve the diagnostic yield in patients suspected to have Crohn’s disease (CD). Aims and Objectives: To analyse the additional diagnostic yield gained from OGD in patients who had diagnostic colonoscopy for suspected IBD.

Methods: We have done a retrospective analysis of the data of 100 consecutive CD patients diagnosed in the time period of 2013–2017. All these patients had OGD and colonoscopy. Endoscopy reports and histology reports were reviewed. We have analysed the cost of OGD in these patients.

Results: Out of 100 CD patients (L1 33%, L2 36%, L3 31%) who underwent both OGD and colonoscopy, 52 colonoscopies and 34 OGD were diagnostic macroscopically (Ulcers typical of Crohn’s disease were seen). Ileal intubation rate was 80%. Histology was diagnostic of CD in 76% colonoscopies and 41% of OGDs. Of the 48 patients in whom colonoscopies were non-diagnostic macroscopically, only 15 patients (31%) had macroscopic abnormalities of Crohn’s disease in OGD. All patients who had diagnostic colonoscopy features of Crohn’s disease, histology was confirmative of CD. Of the 48 patients who had non-diagnostic colonoscopy appearance of CD, 33 had diagnostic histology of CD. Only 2 patients had diagnostic histology from OGD out of the 15 patients who had non-diagnostic histology from colonoscopy. In summary OGD provided additional diagnostic yield only in 2% patients (picture 1). Approximately 75 000 euros could have been saved by avoiding OGD in 85% of these patients (average cost of diagnostic OGD is 880 Euros).

Conclusions: 85% of children with Crohn’s disease can be diagnosed by colonoscopy and histology. OGD provided additional diagnostic yield in only 2% patients with Crohn’s disease.