Introduction

Faecal calprotectin (FCAL) is a useful test for monitoring inflammatory bowel disease (IBD) activity. Providing a stool sample in person to the hospital laboratory is anecdotally unpopular. A new FCAL kit (IBDoc™, Bühlmann) enables self-testing using a proprietary collection tube, camera smartphone and app. The aims of this study were to:
- assess patients’ adherence to and experience of using IBDoc™
- compare the assay to the standard laboratory test
- determine if IBDoc™ can be used to predict a flare of IBD within four months.

Methods

Patients tested stool using IBDoc™ (figure 1) once a month for four months and provided a standard stool sample to be tested with standard ELISA (Bühlmann). The following questionnaires were completed before and after testing: GAD-7 (anxiety), PHQ-9 (depression), IBD-control-8, Multi-dimensional Health Locus of control (MHLC) and Cognitive Behavioural Responses to Symptoms (CBSRQ). Patients were asked to record their experiences and preferences for testing on a proprietary questionnaire. Electronic records were retrospectively reviewed to assess FCAL as a predictor of a flare. An FCAL of > 100 µg/g was defined as a positive result.

Results

54 consecutive patients (Crohn’s: 23, UC: 31, F=28, mean age 36 years) were enrolled. Participants completed a median of 3 tests during the study with 35% completing all four set time points and 32% returning no samples. There was no difference in any of the questionnaire scores between compliant and non-compliant patients. Overall, 85% of respondents stated a preference for IBDoc™ of which 74% would want this to be in the context of prompt contact from the hospital team in the event of a positive result. There was moderate correlation of FCAL results between the two methods (r=0.47, p<0.0001 (fig 2)).

37 patients had at least one paired IBDoc™ and laboratory FCAL result, of which 30 were in remission at the time of the test. To predict a flare within four months IBDoc™ showed greater sensitivity than the laboratory test but a low specificity (table 1).

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<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>NPV</th>
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<tbody>
<tr>
<td>IBDoc™</td>
<td>89%</td>
<td>33%</td>
<td>88%</td>
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<tr>
<td>Laboratory</td>
<td>78%</td>
<td>57%</td>
<td>86%</td>
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Conclusions

Home faecal calprotectin testing demonstrated acceptability with patients, with 85% preferring this to other methods. While IBDoc™ showed only moderate correlation to laboratory FCAL, a negative FCAL of < 100 µg/g by either method is a useful test to exclude a flare within four months. Positive results should be interpreted with caution and repeat testing may be advisable prior to treatment escalation.