Inflammatory Bowel Disease (IBD) is a chronic inflammation of the gut presenting with phases of active inflammation, remission and relapses. IBD treatment goals are mucosal healing and persistent remission. Calprotectin measured in patients' stool samples is a well-established biomarker to measure the inflammatory activity in the gut. Periodical assessment of calprotectin levels is important to measure effectiveness of the treatment as well as predicting relapses. Until now this means that patients send in their stool sample for laboratory analysis, leading to long time spans between sample collection and final test result. A newly developed calprotectin home test called IBDoc® ensures real-time information about the inflammatory activities in the gut for both, the patient and the clinician. The IBDoc® consists of a stool collection and extraction device (CALEX® Valve) and an immunochromatographic calprotectin rapid test, which is measured using a smartphone App (CalApp®) controlling the phone's camera. Once the test is measured the result is sent to a webserver (IBDoc® Portal) allowing the treating physician immediate access to the result.

**METHODS**

8 voluntary patients suffering from IBD and naïve to the IBDoc® system were trained by their IBD nurse to perform the test. The patients were then asked to perform a calprotectin stool test every other week over a period of two months by themselves at home using the IBDoc® system. The patients were asked to fill in a questionnaire after the first and the last test performed. The questionnaires were based on 5-point Likert scale questions concerning all steps of the test in respect of usability aspects. It also contained free commentary sections and system usability scale (SUS) score question. The SUS is commonly used for measuring and comparing the usability of software and integrated software systems.[1]

**RESULTS**

All patients were able to perform using the IBDoc® home testing system during the course of the test period. All patients (100%) felt well instructed and the instructions for the test were well understood (4.9 on a 5-point Likert Scale). When asked how easy it was to measure the test cassette with the smartphone, the patients judged this question with an average score of 4.9 on a 5-point Likert scale. The test result was displayed by the smartphone app in a clear way with a traffic light interpretation and quantitative results within the measuring range of 30-1000 μg/g of calprotectin. All patients felt confident in handling the physical test system as well as the smartphone app. All patients would use the IBDoc® system in the future (100%) and 87% of the patients felt that the home test helps them to manage their disease better. The IBDoc® system reached a mean SUS score of 93 on a scale from 0 to 100. This SUS is well above the software industry's average score of 68.[2] When asked if they trusted the result, 75% of the patients answered with yes after the first test compared to 100% after last test.

**CONCLUSIONS**

This study shows that calprotectin home testing using a smartphone as measuring system was well accepted among IBD Patients. The complexity of the application is low, the entire IBDoc® system can be considered very user-friendly and is easy to handle by lay users without prior knowledge or experience with stool extraction and immunochromatographic rapid tests.

**References:**


**Disclosure:**

In relation to this presentation, I declare the following, real or perceived conflicts of interest:

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