Introducing Patient Home Tests for Calprotectin in a Routine District General Hospital
Pearl Avery, Lead Inflammatory Bowel Disease Nurse, Dorset County Hospital and Gastrointestinal/IBD Nurse of the Year 2018

Pearl Avery with her Nurse of the Year 2018 Award

Pearl Avery is based at Dorset County Hospital in Dorchester. This year she received the Gastrointestinal/IBD Nurse of the Year award from the British Journal of Nursing.

Pearl’s nomination resulted from her strive to provide the best care possible for patients in her local service. This included her pioneering work to introduce a new IBD patient management system which has earned national recognition. It incorporates the IBD registry and the BÜHLMANN IBDoc calprotectin home test.

The new sophisticated technology within IBDoc enables patients to perform quantitative calprotectin tests themselves and then use their smartphones to read the results and share them with clinicians.

Pearl tells us about the impact that the introduction of IBDoc has had for both patients and staff.

4-6 Weeks Wait for a Send Away Result

“Prior to the introduction of the IBDoc home test, all our calprotectin tests were sent to an external provider. So the stool samples were collected by the patient and then dropped off at the GP, who would send them to Dorchester Hospital on the transport run. The lab would then batch the samples and send them to the external provider for analysis. Due to this process it would take anywhere between 4 to 6 weeks before we received a result!”

Having the calprotectin result was good, but it was historic, relating to the clinical situation 6 weeks previously rather than currently. So the patient’s condition may have improved or got worse in the interim.

The calprotectin result was still of value as it is better than the old C-Reactive Protein (CRP) test. It influenced the decision making process but a more timely result could be more helpful in a ‘Treat to Target’ approach which is what we are trying to achieve.

Some patients can have high calprotectin levels whilst exhibiting few symptoms, but in our experience it is still a good indicator that they will relapse in the near future. These cases are a real worry as the patients that feel well but have a high calprotectin level can end up having a bowel perforation. If there is a delay between the rise of the calprotectin levels and the onset of symptoms, having test results available much sooner would give us the opportunity to take action.

Without a Calprotectin Result Treatment Decisions are Difficult

For routine appointments we would always try to have calprotectin results available. With the previous method this wasn’t always possible due to the administrative burden. Even though we sent the patients sample pots and forms to do the test, they often wouldn’t complete them, so they would attend clinic without the result, making treatment decisions difficult.

We have been introducing the IBDoc system slowly for the last six months and uptake has been really good. Originally we had planned to get patients to bring in a sample and we would do the tests in clinic. However, 95% of patients enrolled so far are doing the test themselves at home.

The procedure is quite simplistic – I train the patients using the basic pictorial guide that is in the kit which roughly takes 10 to 15 minutes.

We aren’t targeting patients in advance but are spotting the chance to enrol them in clinic. Initially we discuss if they have a smart phone and if so which type. Then I explain that we have a calprotectin test available that they could do at home. They usually download the App then and there and I sign them up to the portal so that when they get home they have an email link waiting ready to set their password.

Once I have done this I show them what is in the kit and we go through the process using a dummy kit, my phone, the demo card and the pictures in the quick reference guide. It really makes it very simple. If I have any advice for other IBD nurses it is to do this early on in the consultation so that you have time to complete it and you can manage your time more effectively.

Only 2 people have failed to do the test; for these patients it isn’t about the training, it is about confidence – I might get them to do the sample collection at home and then bring in the CALEX valve so that they can complete the rest of the test here in clinic under supervision.

As we continue to roll the test out to more patients it is possible that we will end up doing more tests in clinic.

It doesn’t take long – we will just set the test running at the start of the consultation so that it is completed whilst we are talking and the result is available before the end of the appointment.

Undoubtedly using IBDoc will impact how we have to work with some patients but we are adaptable – it is what we do if we want to be relevant to our patients.
We currently have around 1300 patients who attend the clinic and in the 6 months we have been using the IBDoc we have rolled it out to 97, so it will probably take a couple of years to switch things over completely.

The focus so far has been with the patients who are taking biologics and my next goal is those who are on azothiaprine as they also need close monitoring.

The main group of patients on the biologics tend to be slightly younger and so you might expect this demographic to respond better to App technology. However, we do have some older patients who are quite techno-savvy and have smartphones. Obviously it won’t be for all, but it has surprised us how well some of the older patients have responded. There will be those who won’t want to do it as we expand the test out, but at the moment we are probably enrolling those who are more likely to want to be involved.

Patient Self-Management

Obviously a big reason for us to switch testing methods was the time frame for the availability of results, but there is also a growing patient voice that wants to be self-managed, less reliant on health care professionals and waiting for results. Being in control and getting immediate results reduces anxiety for them.

- Currently we are giving patients tests to complete now so they know how to use them. Obviously moving forward we will have patients who keep a supply at home. We do have one patient who studies away and he has taken a few tests with him. One test has already been done because he didn’t feel well and it gave a positive result, although it was less positive than the previous result. This then allowed us to reassure him that the treatment plan was working and to persevere because he can see the progression in a tangible fashion.

- One of the doctors wanted to stop the azothiaprine on a patient who had been on the drug for several years. The send away calprotectin had been normal and the colonoscopy was normal, but the patient was really nervous. We managed to persuade the patient that she can have an immediate test if she feels unwell, so it has been agreed she will stop the drug and do an IBDoc test in 7 weeks and see me a few weeks after that. She can take the test at home so that if she feels unwell then she can check her calprotectin level at any time. She went away much more reassured.

- One patient who phoned our helpline, because she was quite anxious and unwell, did a sample and brought it into clinic for testing. The result was actually negative so we were able to provide immediate reassurance that her symptoms were not due to the IBD and advise her on her other health issues.

Previously we would have expected to receive at least one call a week until the results were back. In this respect I would say that IBDoc has definitely affected how we are working. This is something that we can monitor, capturing both the helpline and email enquiries. Now I have 97 patient emails and I send a message to say I have noted your result etc. and they will respond by email. So we are changing the traditional communication method. Previously people would be calling – this isn’t something we had anticipated. It is going to be hard to quantify but I will say it has definitely had an impact.

Visibility of Results

In the beginning we didn’t allow patients to see their results. We wanted to understand them first because of the differences between the IBDoc and the referral assay which was supplied from another manufacturer. But now we are allowing patients to view the actual results and they seem to like that.

For me the traffic light system is really useful to inform both the patient and the clinical team what to do.

- Red - we know we have to act immediately
- Amber - we send an email to say the calprotectin level is a little high but we aren’t worried. We can retest in a month and if it is still high then we can consider what to do
- Green - that is great because the patient is reassured that their calprotectin is below the cut off value.

The traffic light system gives us a clear signal and we normally have so much data to manage that infographics are becoming an increasingly important way to help us to manage things.

Cut-Off Values

Currently the cut-off is set at 100 and 300µg/g which is the default setting. However, nearly every patient who has had their treatment escalated to biologics or immunomodulators, had calprotectin levels above 400µg/g.

So we may review the cut-off moving forward, especially as recent publications on treat to target strategies have used a cut off of 250µg/g to indicate remission.

The IBDoc won’t change how we manage patients presenting with acute symptoms. They will still have a flexible sigmoidoscopy within 3 days even if a calprotectin result is available, because we really need to understand what is happening with these patients.

What it might enable in the acute A&E setting is to prevent patients going down the surgical route. Because we can act quickly on the calprotectin result IBDoc gives us the ability to Treat to Target – we had a least one patient like this in the original pilot study.

Compliance with testing can be a significant issue. Typically if I see about 10 patients in a day at least 2 of them who were asked to do calprotectin tests didn’t. Although this isn’t necessarily related to the method of testing.

We may want a baseline test for patients that are well, but since they are not feeling ill they don’t want the trappings of disease.
They want to forget that they have IBD so even with the IBDoc they may still not complete the test.

There are also some patients who will never do these tests because they don’t want to know the result even if they are well.

One of the messages we as nurses need to get across is that even if the test comes back negative we will never ignore patient’s symptoms. Sometimes the patients don’t understand what the calprotectin result is telling them i.e. that the symptoms are not caused by inflammation but some other gastric disturbance that needs managing differently.

There will always be patients who don’t comply and maybe we should be targeting these people because if they take control then hopefully they will be more compliant in the future - but that is an ideal world.

The next group of patients I would like to target with the IBDoc is the well patients. The hope is that it can be used for remote monitoring with a patient reported outcome (PRO) or something similar, because if the result is okay then we could reduce the number of routine appointments.

This will help us in terms of time and cost savings. Patients would benefit too as hospital visits take time out of their day, trying to get a parking space can be rather challenging and the clinics can often overrun.

Treat to Target

In the six months that we have been working with the IBDoc, one patient was saved from hospital admission. It looked like they were having an IBD flare but the symptoms were actually being driven by something else.

With another patient whose calprotectin results were >1000µg/g we were able to put them on the right treatment (steroids) quickly enough to stop the progress of the disease.

The patients who have seen the most benefit from the introduction of the IBDoc are obviously those on biologics because it enables us to monitor them more easily. There are also the patients who we are trying to help understand that their symptoms can be functional and that we will manage them in another way.

The advice I would give to other clinics who are considering introducing the IBDoc is:

■ Ask the point of care manager to negotiate with the laboratory on your behalf
■ Build your case around patient care and improving outcomes
■ Demonstrate how it can potentially impact the hospital finances – it only takes one hospital admission to be prevented or one patient where you can de-escalate treatment and significant savings can be made.

If we can get 50% of the patients on board I will see it as a success. If we can get our IT in place then it will really improve the benefit of the self-monitoring. I don’t see that we have any choice but to make these changes to ensure a sustainable NHS, because the number of IBD patients is only increasing.

Until we find a cure for IBD we have to find better ways to manage the chronically ill that are well and keep them out of hospital, so that we can focus our resources on the chronically ill that aren’t well.

References:

1. Dorset Echo 23rd March 2018

Easy as 1-2-3

The sophisticated technology of the BÜHLMANN IBDoc® system enables your IBD patients to perform quantitative calprotectin testing themselves, in just three easy steps, reading the results using their smartphones.

1. Process the sample with the CALEX® Valve extraction device
2. Apply the extracted sample to the calprotectin test cassette
3. Use the smartphone CalApp® to read and calculate the result and send it to the IBD nurse or gastroenterologist via the secure IBDoc® Portal

More Regular Patient Monitoring

IBDoc provides a practical way for more frequent monitoring of patients in the privacy of their own home.

Under the guidance of clinicians, more regular patient monitoring can help predict potential relapse and assist in therapy optimisation. This approach allows for a customised, patient centric approach for management of disease and therapy.

To find out more about IBDoc please visit www.calprotectin.co.uk/ibdoc or if you are interested in evaluation of IBDoc in your clinic please email digestivedx@alphalabs.co.uk