Successful Introduction of Quantum Blue® Therapeutic Drug Monitoring (TDM) Tests in an Austrian IBD Centre

An interview with Dr. Hans Peter Gröchenig*

**Convent hospital Barmherzige Brüder St. Veit an der Glan, Austria*

We are specialized in the treatment of patients with intestinal bowel disease (IBD). Our Convent hospital has a very big outpatient clinic where we see about 700 IBD patients over the year. Half of them suffer from Crohn`s disease, the other half from ulcerative colitis. A high percentage of our patients are on biologic therapies. We saw that about 20% of our patients are treated with the biologics TNF-alpha, Vedolizumab or Ustekinumab.

When did you introduce rapid TDM testing with Quantum Blue®?
We introduced the Quantum Blue® test in our lab in late summer 2016. I think we were the first hospital in Austria who had the ability to measure biologic trough levels with the Quantum Blue® test. Therefore, we get faster results for monitoring infliximab levels in our patients. In addition, we had the possibility to start with the adalimumab point of care test from Bühlmann in the last three months.

„We need very rapid response from trough levels of our patients who are treated with biologics for perfect patient management.“

How do you use the Quantum Blue® TDM for IBD patient management?
We are very happy that we can use this test, because it is important in our patient management. From my point of view, we need rapid feedback from the laboratory about current trough levels in patients who are on biologics, mainly infliximab, for their perfect management. The Quantum Blue® TDM is important in the management of the later therapy of IBD and this was the main reason we introduced it. Before we started using the Quantum Blue® TDM, we performed the trough level measurement with an ELISA test where we normally had to wait two to three weeks until we received the results. This was far too long for our patients.

Do you measure drug levels during induction?
We use the Quantum Blue® TDM in different situations. One very important situation is when we start induction therapy or when we get patients on a new biologic, mainly infliximab or adalimumab. In the induction phase we want to get more informations about how the treatment responses.
We are happy when we have an inverse correlation as we want to see that the calprotectin level decreases, the faster the better, while having high trough levels.
When we get the results about the trough levels early, we can say if the patients are on a good level or if we have to shorten the intervalls or to increase the dose. Then we can adjust the medication for the later maintenance phase.
We normally make the first measurement at the end of the induction period. For patients treated with infliximab we like to have levels above twenty µg/mL on week six. This would be very good. When we have levels between ten and twelfe µg/mL, we are not so happy. But you have to bring the drug level also it in correlation with the calprotectin value, the patients quality of life and their symptoms.

EOA Dr. Hans Peter Gröchenig, Consultant in Internal Medicine, Convent hospital Barmherzige Brüder St. Veit/ Glan

How do you use biologics trough levels during maintainance phase?
I think there are different situations for the use of trough level measurement during the maintenance phase. When we have patients who are stable on

"Within 30 to 60 minutes we get the trough levels and can adjust the drug therapy in the same patient visit."

the maintenance dose, we routinely check the trough level once or twice a year. When we have levels between four and seven µg/mL it is ok. But when we have levels who are too high, I would say above 15 µg/mL, and we have low calprotectin values, we could try to extend the interval or reduce the dose. On the other side, when we have patients who get symptomatic, calprotectin increases or they get problems like perianal disease or fistulas and we see that the level is not that high (about 10 µg/mL), I would try to shorten the interval or to increase the dose. For both biologics, infliximab and adalimumab, it is the same.

Are you satisfied with Quantum Blue® TDM in IBD patient management?
I would say I am very happy with the tool. The Quantum Blue® test is implemented in our laboratory and performed by our laboratory staff. The impression is very good because it is an easy and fast test. Normally, most of our patients we see in our outpatient clinic bring us a stool sample. In addition, a nurse will draw blood from the patients and we bring it to the laboratory for analysis. Within 30 to 60 minutes, we get the results from the trough level measurement as well as calprotectin and other measurements we want. When I have all results I can talk with the patients about the next steps in their therapy. This is very important since I can say to the patients "look your calprotectin is going up the last three times and your trough level is not that high I want, so we have to change the therapy". Or, I can say "everything is fine, you have normal calprotectin values and the trough level is in a good range, we stay on

„It is very important to combine drug level and calprotectin measurement for ideal treatment decisions."

the therapy like it is right now".

So, do you combine drug levels with calprotectin and how do you interpret the results for therapy decisions?
Yes, that is very important. I think most of the time we have to combine it because we can not get treatment desicions when we have only one of these two values. We always need

"The Quantum Blue® rapid TDM is easy and fast."

the calprotectin to have informations about the inflammation burden, and informations about the biologic, how it is behaving in the body, at the same time. We need to know if we have a treatment failure due to a loss of trough level, resulting in an increase of the medication. If we have a real treatment failure, this is when we see the trough level is high enough but the patient is not responding, then it is for me the point where we have to switch the therapy either to a different drug class or to a different TNF alpha blocker.

To wrap it up: what are the main advantages of Quantum Blue® rapid TDM for you?
It is easier and faster than the test we used before and this is the big advantage from my point of view. Using this test we receive the test results in a real time frame. We only have to wait 30 to 60 minutes to get the values and then we can react in the same visit and change the treatment of the patients. This is the big advantage for this point of care test.

Dr. Gröchenig, thank you very much for this interview.

QBTDMCTVEL032019-01 E

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