ADAPT PTP Functional Medicine Q&A with Chris Kresser

Tuesday, September 28, 2021

1. This is a 59-year-old male with low white blood cell count, 3.5, neutrophils, 27, [and] lymphocytes, 61. Also from the same patient, [total iron-binding capacity] (TIBC) [is] 242, [and unsaturated iron-binding capacity] (UIBC) [is] 80. Iron saturation [is] 67, iron [is] 162, and ferritin [is] 259. [00:41]
2. Worsening labs for a 33-year-old male who was treated for *Citrobacter* and dysbiosis in March. No follow-up stool test was done. He and his wife said they cleaned up their diets and started an ancestral keto diet for three months, and then they redid labs. Total cholesterol had gone up slightly from 223 to 229. [High-density lipoprotein] (HDL) [went from] 35 to 29. [Low-density lipoprotein] (LDL) went from 160 to 183. The total cholesterol to HDL ratio worsened from 6.4 to 7.9, and [C-reactive protein] (CRP) went from 3.85 to 5.89. And ferritin went from 415 to 474. [04:39]
3. [A] patient with [a urinary tract infection] (UTI) had three repeat [urinalyses] (UAs) with high squamous cells, 122. Lab and primary continue to say contaminated collection, but ongoing bladder issues continue and extra caution with use during collection. [07:30]

I'll start with a couple [of] questions that have been sent in. Patricia, if you have any questions, let me know.

Okay, [the] first question [is] from Dara, [who's] asking about some labs. "This is a 59-year-old male with low white blood cell count, 3.5, neutrophils, 27, [and] lymphocytes, 61. Also from the same patient, TIBC [is] 242, [and] UIBC [is] 80. Iron saturation [is] 67, iron [is] 162, and ferritin [is] 259."

So that looks like iron overload. Iron saturation [of] 67 percent [is] definitely high. UIBC is low, and remember, that's an inverse marker. And then serum iron of 162 is high, and ferritin of 259 is high in my book. That's within the lab range; it goes up to 400 in the [United States]. But as we discussed in the curriculum, you see a linear increase in adverse outcomes related to iron, excess iron storage, as ferritin goes above maybe 150 or 200 in men. So that's definitely something that I would look into. One of the things to be cautious about is that iron metabolism gets a little funky when there's an infection present, and you said that this was a herpes case Yes(in the pre-submitted question). So what the body will try to do is sequester iron, in those situations, in ferritin to keep it away from the pathogen. That is often referred to as the anemia of chronic disease. And the way that will typically present [is] all the iron markers will be normal,

except ferritin will be elevated. But that's actually not what we're seeing here. We're seeing iron saturation elevated, serum iron elevated, and UIBC low, which, again, is an inverse marker.

That looks like more straightforward iron overload, and particularly with a potential virus present, I think that would be important to address. So the first thing I would do in that situation is retest because iron metabolism is fickle. And I would say at least 30 percent of the time when you retest, the numbers are normal or different. So that would be a starting place for sure, retesting the full iron panel. If those markers are still elevated, then I would focus efforts on addressing iron overload, as we discussed in the course. Phlebotomy is usually the treatment of choice and will have a far bigger impact than anything else. And you don't really want to necessarily restrict iron-rich foods because they're also rich in a lot of other nutrients. But if phlebotomy is contraindicated for any reason, then you might have to think about other things like apo-lactoferrin, and maybe some diet modification, and some of the things that we have on the handout for you for the iron reduction protocol. So that's the answer to the first question.

Then there's another question about "Worsening labs for a 33-year-old male who was treated for *Citrobacter* and dysbiosis in March. No follow-up stool test was done. He and his wife said they cleaned up their diets and started an ancestral keto diet for three months, and then they redid labs. Total cholesterol had gone up slightly from 223 to 229." Not at all unexpected on a keto diet, by the way. But I'll come back and talk about each of these markers. **"HDL [went from] 35 to 29."** That is somewhat unexpected on a keto diet. Usually, you'll see HDL go up. **"LDL went from 160 to 183."** Not unexpected. **"The total cholesterol to HDL ratio worsened from 6.4,"** which is already not great, not good, **"to 7.9,"** which is definitely not good. **And CRP went from 3.85 to 5.89. And ferritin went from 415 to 474."**

So those two markers, I think, are really what might be the clue here. The inflammatory markers went up, CRP and ferritin. If the other iron markers are normal, it doesn't confirm, but it suggests that ferritin elevation is more related to inflammation than iron overload. You could use a marker called soluble transferrin receptor, which we discussed in the course, to confirm that. Or maybe that's too strong of a word. To add another clarifying piece of the puzzle, if you will. So running something like interleukin 6 [(IL-6)] and soluble transferrin receptor [IL-6] being another inflammatory marker. So if that's elevated and soluble transferrin receptor, which is a marker of iron storage that's not affected by inflammation unlike ferritin, [is] normal and IL-6 is high and ferritin is high and CRP is high, that's pretty compelling evidence that the ferritin elevation is related to inflammation and not excess iron storage.

So questions I would be asking looking at this is what am I missing in terms of a potential cause for inflammation? It's maybe the *Citrobacter* dysbiosis didn't clear up, [or] maybe there's something else going on that that original stool test missed. Maybe there's [small intestinal bacterial overgrowth] (SIBO). Maybe there is heavy metal toxicity or other types of toxins. Some of the persistent organic pollutants that you'd find like on a GPL-TOX, which we're not covering

these tests in this course, but it might be worth looking into. Maybe there are other types of chronic infection to look into if there's any background or history there. But I think what seems pretty clear here is that there's some cause of inflammation that is driving these inflammatory markers and possibly driving the dyslipidemia, as well. Inflammation can be a result of other factors that drive dyslipidemia, and it can also be a cause of dyslipidemia. So those are the things that I would look into.

Okay, so [here's a] question from Patricia. "[A] patient with [a] UTI had three repeat UAs with high squamous cells, 122. Lab and primary continue to say contaminated collection, but ongoing bladder issues continue and extra caution with use during collection."

Yeah, I think in these kinds of situations, it makes sense to do some further digging. Maybe see if there's symptomatology, some of the herbal formulas, the botanical remedies that we talk about in the course for [gastrointestinal] (GI) issues, like GI-Synergy, for example, or FC-Cidal or Dysbiocide, Biocidin. And then some of the probiotics. Both of those interventions can be helpful in the case of [a] UTI. And as you know, I'm sure, UTIs can be very persistent, and sometimes extended treatment is required to fully knock them out. I would consider some of the botanical remedies that we use for GI treatment in the course, and then let me see if I can find this article that we published a while back on natural treatments for UTI[s]. I'll put it in the Zoom chat area. So here it is. In addition to some of the botanical stuff we do for GI conditions, which can be helpful for any situations, as well, then you can look at some of the treatments in that article that you can recommend and they can do and/or they can do on their own.

I think you need to be careful with UTIs, of course. As you know, a UTI that isn't properly treated can become a kidney infection, which is much more serious and carries a lot more risk. So it's generally good to be judicious and pay attention and treat not super aggressively, like in the case, I think antibiotics can certainly sometimes be necessary. But you have to be careful with those because they can potentially increase the risk of future infections. So I think that's what I have to say about that.

Adam, if you just joined or if it started using Adam's account, we're trying an experiment here with Zoom with the meeting format. So it's a little different than the webinar. You can ask a question in the chat box; you can raise your hand by, I think you scroll down to the bottom of the window and do it there. Or you can just unmute and ask a question if you want to be audio-only, because there's only a few of us on the call. And there were no more questions sent in. So I'll wait and see if the two of you have any questions on the call. And if not, I'll give you some time back for today.

I'll just give it another minute before we finish up. And of course, as you know, you can send questions in between sessions, and you have the session with Tracey, as well. All right, thanks for joining this very brief session. If you do have questions that pop up, feel free to send them in, and we'll get back to you. And then there's the upcoming session with Tracey. [I] hope you all have a wonderful rest of the week and weekend.