COVID-19 Vaccines with Dr. Benjamin Greenberg

Part V

You can view of this video at: https://youtu.be/U_Vf-eXEcCs

GG deFiebre: [00:00:00] Thank you again, Dr. Greenberg, for joining us today to talk more about the COVID-19 vaccines. This is part five in our series. So, to start, do you mind just giving an update about kind of what the experience has been so far with maybe your patients or overall for those with rare neuroimmune disorders getting the COVID-19 vaccines?

Dr. Ben Greenberg: [00:00:25] Yeah. So, it's continuing to be an exciting time. So first from the United States perspective, we've been using, for the longest period of time so far, the Pfizer and the Moderna mRNA vaccinations. And there have been more than 70 million individuals who've gotten both doses of vaccine, and the last number I heard was over 180 million total doses of vaccines given, which is an extraordinary number in what is a relatively short period of time. In general, in our patient population, we've had lots of patients with neuroimmunologic disorders - so this includes transverse myelitis, neuromyelitis optica, anti-MOG associated disorder, optic neuritis, ADEM, and multiple sclerosis.

[00:01:11] Lots of our patients have been getting the vaccine series. And what we're hearing from them are similar side effect profiles from what we are in the general population. Lots of sore arms, and particularly with the second dose, we hear a lot more of having a 24-hour period of feeling under the weather, or feeling tired or, or just low energy, some headaches.

[00:01:38] There have been some low-grade fevers. All of this is very common. And usually, people are feeling better by then the next day after that. In our population, at least in my patient population, I am not aware of any of our patients who've had a new inflammatory event in the period of time after a vaccination.

[00:01:56] Now, statistically for patients with relapsing disorders - so neuromyelitis optica, people with the anti-MOG antibody who've had relapses, multiple sclerosis patients. When we vaccinate 300 million individuals, and let's say there's a million people who have an autoimmune disease that affects the brain and spinal cord, statistically, somebody is going to have a relapse in the 30 or 60 days after a vaccine. It's going to be reported. It's going to happen. Just mathematically, people have relapses spaced out.

[00:02:30] So it's not a matter of if there's going to be a relapse, the question is going to be, how frequently do we see it, and do we see it in a pattern that is more, more than expected? And so far to my knowledge, we have not seen that. We'll talk about the J and J vaccine, which has been put on hold in the United States separately, but in terms of the Pfizer and Moderna, we're, we're not seeing any unique issues, thankfully.

GG deFiebre: [00:02:55] Okay. And then have patients reported experiencing like a temporary worsening of symptoms at all? Or, and if someone does, what, what should they do in that case?

Dr. Ben Greenberg: [00:03:04] Yeah, it's a great question, and thanks for bringing it up. Yes. So anytime one of our patients who've had inflammation in the optic nerve, the brain, or the spinal cord, has a systemic stress, whether it's they get a respiratory infection or a urinary tract infection that causes a fever, whether they've slept poorly, whether it's hot outside. Or they get a vaccine that induces production of cytokines in their body that gives them a low-grade fever. Because of those systemic stressors, old symptoms may return in transit.

[00:03:37] And they may last as long as that stimulus is there. So, if somebody has a fever for 24 hours, they may have worsening of their vision or their previous leg weakness or arm weakness that they had recovered from during that period of time. So that is fairly common. It's not unexpected. What we tell our patients is if you have a worsening of prior symptoms that is mild to moderate, and especially if it gets better as you go off, take Tylenol, hydrate, then it is not something to be concerned about, and you should return to your baseline.

[00:04:12] For anybody, whether you've had a prior autoimmune disorder of the nervous system, or you've never had one of these conditions, if you have a new neurologic symptom that you've never had before... So, a good example for our transverse myelitis patients is, let's say you were a patient who had had weakness in both your legs, and you had never had weakness in your arms, never had visions issues, and you were diagnosed with idiopathic transverse myelitis, a one-time event of the lower spinal cord.

[00:04:42] And at some point, whether it was with the vaccine or not, you developed new arm weakness. That's a new symptom. That's something you've never experienced before that you would want to see care for. You would want to see a physician. You would want to see a healthcare provider to have that evaluated. And that's true whether you got the vaccine the day before or you're scheduled next week. Whether it's related to the vaccine, a lot of new neurologic symptoms should always be evaluated.

GG deFiebre: [00:05:06] So some people in our community might be on something like Rituxan, for example, who, you know, the concern potentially was that they might not produce the same sort of response as someone who isn't on something like rituximab.

[00:05:23] So we've heard of some people getting the anti, spike antibody test and it not showing that they have antibodies. Is this a cause for concern, or can you talk a bit about the potential issues or what you're seeing with your patients as well?

Dr. Ben Greenberg: [00:05:38] Yeah, so just as a reminder for everybody, the whole point of vaccines are to elicit a safe immune response that provides you protection when at some point later you got exposed to a virus. And so we, for the mRNA proteins, we put in a little RNA, your cells make a spike protein, which is part of the virus, and presents it to your immune system so that if you're sitting in a restaurant, whenever that happens again, and somebody next to you sneezes and has COVID and you get exposed to the virus, your immune system is ready to fight it off and you don't get infected or you don't get sick.

[00:06:15] So, when we have patients who are on immunosuppression to prevent autoimmune attacks, like using rituximab for neuromyelitis optica, we are interfering with the immune system that would normally be primed by the vaccine. So the question is, for our patients on immunosuppression, how effective is the vaccine?

[00:06:38] So first it's important to say, to our knowledge, the immunosuppression does not change the safety of the vaccine. It is perfectly safe to take, but it remains to be seen whether or not you individuals on rituxan will, rituximab will develop an adequate immune response. So what some people have done has, has been to get a blood test to see, did they mount an immune response. And the important note here, and you said it, was to do the blood test for an anti-spike protein. The original blood test to see if I had ever been exposed to COVID was looking for antibodies to a different protein on the virus.

[00:07:16] And so if your clinician checks the wrong box, you could get back a lab slip that says negative for anti-COVID antibodies, but you were testing for the wrong one. So you have to ensure it's for the spike protein antibody. Now, if you test negative for the antibody, does it mean for certain that the vaccine was ineffective?

[00:07:36] And the answer is we don't know yet. Ourselves as well as other centers across the U.S. are doing studies right now to look at the other parts of the immune system, the so-called T cells - T like Tom. T-cells, which can also be primed by a vaccine to fight off infections, but we don't yet have a good blood test to see if that happens.

[00:07:58] So it's possible that somebody who's on an immunosuppressant will fail to develop an antibody for the virus but may still get a benefit from the vaccine that we just can't quantify. So, the studies are ongoing now. We encourage our patients to get vaccinated. If you want to get the antibody test, that great.

[00:08:17] If you mount a response, it's very reassuring that you are protected, but if you didn't mount a response, we don't know yet if you're a protected or not, and so you'll have to decide how to use that information in your day-to-day life.

GG deFiebre: [00:08:31] Okay. And then are there currently studies ongoing looking at this or are there... Okay.

Dr. Ben Greenberg: [00:08:38] There are. We're, we're running the site. So, if anyone's in the Texas area and wants to give blood samples before and after vaccinations, there are lots of places around the U.S. who are collecting specimens from people and, and testing. So it's an area of active study.

GG deFiebre: [00:08:57] Okay. Great. And then we got one question, you know, so someone may have been diagnosed with one of these rare neruoimmune disorders at a young age, and then maybe, you know, as they got older, aren't the, you know, maybe a different weight than the average person of the same age.

[00:09:13] So weighing less than, than, you know, the, the standard weight of someone of their, you know, the same age. Is there any sort of potential issues with the vaccines' effectiveness depending on weight, if someone is underweight or overweight, you know, compared to what is considered the standard or norm?

Dr. Ben Greenberg: [00:09:29] Yeah. So, so when we talk about dosing of drugs, often many drugs that get studied or studied in a weight-based approach. So for a certain weight, there's a low dose and as you get a heavier weight, a higher dose. Vaccines really haven't traditionally been studied in the same way around dosing, but that work is being done and there have been some publications for some of the COVID vaccines. And in general, a low weight isn't a concern. The, the vaccine should be just as effective in you as an average weighted individual. But for individuals with BMI's over 30 or 35 - so for those of us who are heavier - there are actually some data that suggest that the vaccine efficacy may be slightly lower.

[00:10:15] W I, I haven't seen the full dataset. There've been little top-line results. But there, in terms of an association between weight and efficacy, the concern is on the heavy side, not the light side.

GG deFiebre: [00:10:29] Got it. Thank you. And then obviously the Johnson and Johnson vaccine, we've been hearing in the news about these very rare blood clots, and we saw something similar occur, you know, outside of the U.S. with the AstraZeneca vaccine.

[00:10:43] Do you mind talking a bit about that as well?

Dr. Ben Greenberg: [00:10:47] Yeah. Yeah. There, there are lots of ways to look at this. We, we can be the optimist or the pessimist, depending on how you want to package things. And what's frustrating to me is what I call the spin being applied to this information. I think we need to all be a level-headed and scientific about what's being reported.

[00:11:07] So first, I agree with the pause that the FDA and the CDC did. Based on the data we've seen, there were six women between the ages of 18 and, and I think forties as, as the high end, who developed a clotting disorder known as a cerebral venous thrombosis within a couple of weeks after the Johnson and Johnson vaccination. Unfortunately, one of the women passed away, there was a woman reported in the hospital, and the rest were outpatient but had noted to have these clots.

[00:11:40] These are rare clots. They do occur naturally in people. We admit individuals with these clots to the hospital all the time. But to have six of them was enough out of an abundance of caution for the FDA and the CDC to recommend a pause so we could gather more information, more data.

[00:11:56] So what's the... let's start with the bad news first. The bad news is that obviously we are troubled when any of our neighbors, friends, and family get ill and want nothing but the best for these patients who are dealing with this. If there is an association, and that hasn't been proven yet, then obviously it'll raise concerns over how to integrate the Johnson and Johnson vaccine into the repertoire and who should or shouldn't get it and screening methods for how we follow folks.

[00:12:27] The good news about this, and again, I don't want to minimize what's happening with these individuals who are dealing with this, but, but the good news is twofold. So, number one is, the monitoring system worked. So, the monitoring system was able to identify six needles in 180 million, a big needle stack, who was able to identify a rare event, see it get to a level, and act on that information in a very efficient manner.

[00:13:00] This isn't like in some drug studies where you hear 10 years later, we've discovered an association and, and it's in retrospect. This is in real time that the system was able to find this information. And so, for me as a clinician and as a patient, as somebody who's getting the vaccine, and as a father with daughters who are getting the vaccine, knowing that the system worked is extremely reassuring. And knowing that there was transparency, nobody was trying to hide the clots, nobody was trying to dismiss the clots.

[00:13:28] Everything worked as it should. That was extremely reassuring. The second positive is the math behind this. So let's say there is an association - and I'm not arguing there is - but let's say in the end, scientifically, somebody proves an association between those clots and the Johnson and Johnson vaccine, we've given 180 million of the Moderna and Pfizer doses, and we haven't picked out the six events, which means the, what will be reassuring is the system is working. We're able to find these events when they occur, but we didn't find them with the Pfizer and the Moderna. So we, it should really augment the faith we have in the safety of those two vaccines.

[00:14:14] I've not given up on the Johnson and Johnson. I look forward to hearing the reports from the FDA and CDC to see how we're going to use this moving forward. And it is worth noting that even if there is an association, thankfully, this was an extremely rare event and a low-risk event. And so, we are always cautious about what we put in our bodies as we all should be, but overwhelmingly the safety data is supporting the use of the vaccine.

GG deFiebre: [00:14:41] Got it. And so, the, was this similar to what we saw with AstraZeneca, you know, outside of the U.S.?

Dr. Ben Greenberg: [00:14:47] Yeah, we're trying to sort through that as well. There are certain patterns that seem similar. There were different issues in, in the individuals who had clots between the two.

[00:14:57] And so I, if I had to bet, and I'm not on that panel or on that committee, but if I had to bet, that conversation is happening right now between the U.S. regulatory authorities and those in the EU.

GG deFiebre: [00:15:12] Great. Thank you. And then, is there any, anything else you want to discuss today that you think is important for our rare neuroimmune disorder community?

Dr. Ben Greenberg: [00:15:20] Yeah. So just one other thing, I'd point out as we're, we're talking about the efficacy of the vaccines, we got to have some UT Southwestern pride in the last few weeks. We had a nice paper from colleagues here come out in the New England Journal of Medicine that got cited both by Dr. Fauci and President Biden during events about the efficacy.

[00:15:40] And one of the important things from the paper was looking at healthcare providers. Rates of infections before vaccination, in between dose number one and number two, and then after number two. And most infections that have happened in health care employees have actually been community-related spread.

[00:15:58] There've been very few in-hospital transmissions found. But what was amazing in this paper was the infection rate just dropped off the mat within weeks of that second shot. It went down between week one and two. But after that second shot, the rates went down and have stayed down ever since.

[00:16:17] And it was a really nice testament to the impact you can have on an ecosystem of people by taking the vaccine. It's, it's made a huge difference. And so I still encourage everyone to talk to your healthcare providers, but in general, we are still recommending for all of our patients to go ahead and get vaccinated.

GG deFiebre: [00:16:36] Great. Thank you. That is very encouraging. So. All right. Thank you so much.

Dr. Ben Greenberg: [00:16:41] Thanks for everything.