Reverse The Risk Of Acquired Hypercoagulability After COVID Transcript

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Introduction to Long Haul COVID and MCAS

– Welcome to this episode of the long haul chronic fatigue summit. I'm so happy to have with me today, my friend and colleague Dr. Kelly McCaan today we're gonna be talking about mast cell activation syndrome and long haul covid.

In addition we're going to talk about its relation to pots syndrome and hypercarliability. Dr. Kelly, will you please introduce yourself to our audience?

– Of course Dr. Nafysa I'm so happy to be here. So I am an internist and pediatrician medical doctor by training and then I discovered functional medicine. So I am a functional medicine doctor have an integrated practice in southern California and I love talking about mast cell activation, chronic Lyme disease, mold exposures, um environmental environment.

– And we sit on the board together of I the international society of environmentally acquired illness. So we both have patients who have environmental toxicity issues one of the infections. So let's dive right in.

And Dr. Kelly tell the audience what mast cell activation syndrome is and how this is relevant to a discussion on long haul covid. – Yes.

What Mast Cell Activation Syndrome Is

So mast cell activation syndrome is a condition where mast cells which are a normal part of our immune system have gone rogue and they have um their job is to normally surveil for foreign invaders toxins infections and then to cause an inflammatory response that is hopefully helping the person fight that infection. However in some lucky people they get a genetic predisposition and then they get triggered so that their mast cells are now um perceiving threats where there may not be any. So for example people can have reactions to the food that they eat. They can have reactions to chemical smells.

They can have reactions to um the pressure from from their clothing. They can have all sorts of reactions. And this makes living life very difficult essentially. And the cytokine storm that people experience in in covid is in part related to mast cells dumping all their inflammatory mediators. And we know this from clinical studies that that's what's happening. And so it's thought that the mast cells get triggered by Covid and then they get perpetuated so that they're continuing to dump all their inflammatory mediators. The mast cells are actually really pretty cells.

They contain all of these Granules that are these packets that we call mediators. And those mediators are filled with things like histamine, tryptase, this kind of cytokines and chemokines. And when they are threatened or perceive a threat, they release all their inflammatory mediators.

And this can cause a wide variety of symptoms, – Right? And people often think that mast cells are just related to an allergic response. But but we now know it's really it's really there related to so much more.

They line they line our our nerves they line are mucosal tissues or even in the brain. And so people can have symptoms in all of these areas and tell us what you're seeing in your practice with people who have long haul covid and mast cell. – So many of the patients.

I'll see will have chronic fatigue, they'll have brain fog, they may have confusion issues, they may have psychiatric issues, a lot of anxiety, a lot of depression, a lot of mood instability.

They may have palpitations and cardiac symptoms. They may have autonomic nervous system issues too. Like a fast heart rate or palpitations particularly when they stand up.

Or they may feel dizzy and lightheaded because their blood pressures are dropping. They can have pain anywhere, they can have headaches, migraines, sinus issues. Any sort of itis, right? I. T. I.

S. Is our designation and medicine for inflammation and that's one of the hallmarks of mass cell activation is that they have an allergic or inflammatory reaction and many systems of the body.

And so if this starts to sound like you you may have mast cell activation and it's possible to trigger mast cell activation after covid. – Right? There's so many different theories, at least five of them on how this can happen.

MCAS Symptoms in Long COVID Patients

What are some of your theories on how mast cells can trigger long Covid? – My sense about it is that people may already have a predisposition but they just don't know it.

For example, maybe they're slightly allergic or they're slightly sensitive to things. Maybe they have eczema or even have a history of asthma as a child.

Maybe they have irritable bowel symptoms. But they don't really think about them as you know, being sick. They could have some palpitations or anxiety or depression.

So there's evidence that things aren't quite right, but they're not, they don't consider themselves to be sick or ill. And then the Covid comes along and just causes such marked inflammation because the body's trying to protect itself is trying to deal with the infection that's present and they get a cytokine storm and the storm never turns off because their mast cells are now really triggered.

So that's one way that it can happen, – Right? And that makes so much sense. The body. The body already has this low level of inflammation, but the person doesn't necessarily think much of it. They think it's normal or oh, I'm just aging or maybe just my jeans. But then along comes this added inflammatory cytokine flare and it just stirs the pot. – Exactly.

– And now, what could have been a minor symptom becomes amplified. – Yes. I think that this happens to, for people who might get a tick bite and end up with Lyme disease, this can happen with mold exposures.

Those can be the triggering, uh those can be the triggering events for the development of mast cell activation. I also have a suspicion that people who have, like low level issues. Maybe they have mass cell or maybe they have mold or maybe they have Lyme, it got something that's causing a mild disruption and mild dis regulation and then you pour in some inflammation due to Covid and it just skyrockets and blows up and now they have so many more symptoms because things weren't quite weren't quite normal or regulated beforehand. – Right.

So the sight of this could be due to the virus itself or to to the virus activating mast cells that are already somewhat activated. – Yes. Yes. I do think that that's a possibility.

– Right. Anything could be um there could be a loss of genetic regulation of mast cells too if people have that propensity as well. – Yes of course. You know I do think that there is a genetic predisposition. We don't know all the genes and I know that many of the researchers talk about the gene gene variants as being somatic genes and we get somatic gene um changes when there is some sort of large trigger.

Right. Right. So it could be that the Covid causes that somatic gene trigger that causes the mast cell activation presentation and people. – Yeah. Thank you.

How COVID Can Trigger Mast Cells

So let's talk about the treatment options for mast cell activation syndrome or for honest, MCAS for short. And so let's talk about that. What treatments do you like to use?

– There are so many treatments. It's it's really wonderful how many options we have and many of these options are herbs or they may be over the counter medications.

So patients have a lot of possibilities that they can do even for themselves. So I love to start with anti histamines. I think that's a great place to start.

Many people tolerate anti histamines and by that I mean things like Zyrtec Claritin, Allegra, Zeisel, Those are the second generation H one blockers. People can also use Benadryl and these things oftentimes I find have to be dosed more than more than once a day. So typically two and three times a day in order to really calm down that histamine response that people have.

Now if you don't have a positive reaction to an anti histamine or not much happens um Doesn't mean that you don't have mass cell activation simply means that maybe histamine is not your issue. Or there's other things to try.

I do like H. Two blockers. So that would be Pepcid 20 mg twice a day. And I find that actually there's there's research for accommodating or Pepcid for COVID and I think it's in part because it blunts that histamine response in the gastrointestinal system.

I'll say for me when I got Covid, Pepcid was was really helpful. – Yeah. For me, Zyrtec was very cool. Yeah. So um it just goes to show just anecdotally even how how much just treating mass cells can help in the treatment of Covid. Just acute infection.

Right. Right. – And certainly worth trying in long haul Covid Other things for um mast cell activation in the context of long haul Covid things like cromelin which is a mast cell stabilizing medication.

It can be compounded or available commercially. Typically it's taken 100 mg 2 to 4 times a day. You can work up to 200 mg four times a day if necessary. And that coats the gastrointestinal tract which would prevent any food to trigger the mast cells.

In the gastrointestinal track. There are prescription medications comp founded only Kitadafan which has been very very helpful for people. Usually the more sensitive the person is the smaller the dose I have to start with them.

So it might be like 0.5 mg um Once or twice a day working up to potentially even for milligrams you know five mg three times a day. That one has some mast cell stabilizing effects.

A little bit of anti histamine effects. There is a Canadian medication called rupatadine That is really fantastic, particularly in um Covid when there is some clotting which we'll get into a little bit more here shortly. Rupatadine is usually dosed 10 mg once or even upwards of four times a day. And it can be prescription for Canadian pharmacies for the US patients. If they can get somebody to write for it.

MCAS Treatment Options

And perhaps it's available elsewhere in the world but it has not only anti histamine effects, it has platelet activating uh platelet activating factor inhibiting effects which is very important for that clotting.

And then there's a ton of supplements. So many supplements. When I was doing my research for my mast cell Summit there were 65 different supplements that can be helpful. So it's a lot some of the most famous ones are quercetin and luteolin. People use pick nominal, they'll use skullcap, Tulsi, Petunia, you can use butter burr or let's see what are some other ones.

D. O. Enzymes. There are low histamine probiotics. Some people have found that CBD can be helpful. I also like he said luteolin So there's just so many so many para mean. And those can be very helpful to for any mast cell symptoms. – Do you find with your patients that a lot of them might find it easier to take the compound and medications than the herbs Because the very sensitive ones. – Oh absolutely the very sensitive ones.

You know some of them do great with herbs but some of them it's much better to just do the compounded super clean versions. Even compounded Zyrtec or Claritin might have greater benefits than some of the herbs. Another one that I like is low dose naltrexone. I find LDN very helpful for that immune modulation as well as the mast cell symptoms. – Yeah I agree.

I find that most of, well most of the very sensitive patients. They can't even tolerate the herbs yet. We'll even have a mass cell activation reaction to the herbs. I think it's because there's so many different chemical components to the herbs. But then I'm a natural you hear me not say that. But the find the compounding medications they're they're just a little bit more simple and so people can handle those better and then we graduate them to the herbs. Exactly. Exactly. Yeah.

– It's helpful to know um how sensitive somebody is and then we kind of get a sense as to where they can start. Um And I also find because there are so many options if people are able to do some sort of applied kinesiology otherwise known as muscle testing to give their you know their intuition a chance to speak to the issue that can really help to when I've got you know two dozen different options.

And that will take us a very long time to figure that out. It's very helpful to be able to kind of pinpoint. Okay this one will be good, this one will be good and we'll try the ones that your intuition and your body seems to gravitate towards. – Do you feel ready to answer what I think is gonna be one of the most interesting questions of this summit pots.

Do you want to, Is there anything else you want to talk about before we get into the juice of this? – Yes. Okay so pots stands for postural Ortho static tachycardic syndrome and that means that the autonomic nervous system which normally regulates our heart rate. Our blood pressure as well as many other things temperature, um our digestion, our breathing, our heart, all of that, that's regulated by the autonomic nervous system.

Can get dis regulated and with pots in particular. The definition is when you're lying down, your heart rate is let's say 60 beats per minute and when you stand up, your heart rate would jump more than 30 beats per minute.

So from 60 to 90 or 100 within the 1st 10 minutes. And sometimes in people it jumps right up right away and they feel very dizzy. Sometimes it takes a little bit longer for that heart rate to kick up.

But that's considered, that's the definition of pots for younger people, maybe you know, 20 and younger or 18 and younger, it has to be 40 beats per minute.

So it's a much higher jump. And that is a form of what we call dysautonomia where the autonomic nervous system is not regulated, another form of dysautonomia could be Ortho static intolerance or Ortho static hypertension.

And the definition of that is if you go from lying to standing, the blood pressure will drop. So for example, the systolic blood pressure. The top number would be 100 and 20.

Bottom number would be 90. And when you're lying down and then when you stand up it drops to 90/60. Yeah, that's a big, that's a big drop and the person is going to feel dizzy.

Lightheaded, sick to their stomach nauseated all of those things. And so that's another form ofdysautonomia. And there are a couple of theories about why long haul wong.

Covid or Covid in general can trigger a dis autonomy. A picture like pots. One of them is, you know, kind of a there's just not enough fluid. That's what the researcher said. You know, it's hypervolemia, just not enough fluid. Not sure how important that one is.

A second one is inflammation. And obviously with mass cell activation, we've been talking about inflammation. And we see a lot of mass cell patients with dysautonomia And so it makes sense that that pots patient may actually have a full blown mast cell activation syndrome to caused by the inflammation of the mast cells.

And then yet another theory is that there's some sort of auto immunity. And what what may happen is there's molecular mimicry between the virus and some of the nerve cells that are governing the ganglion that are governing governing the autonomic nervous system. And so you get a auto immune pots autoimmune um dysautonomia from the virus and from the inflammation of the virus.

And these people have a really hard time. And the sad thing is that most cardiologists do not think about pots. They don't want to treat patients with pots.

It's very odd, particularly for adults. I mean it's one thing if it's a child, the pediatric cardiologists are much more um used to seeing young girls in particular who have these sort of dis autonomy, a pictures.

But I've sent a variety of different female patients to adult cardiologists and they don't know what to do. They don't work them up. Unfortunately, it's really easy to do some Ortho static vital signs in the office.

Understanding POTS and Dysautonomia

I mean patients who thing I think that they might have pots can even just get a pulse ox and check themselves. So what I tell patients to do is if you have a pulse ox, which will cost you $30 on Amazon and when you're lying down in the morning, you check your heart rate and then when you stand up, check your heart rate again every minute for 10 minutes and see what happens.

And if your heart rate goes from 60 to 100. Congratulations. You have pots. – Right. Right. So we've been seeing this for more than a decade now in our patients who have chronic tick borne disease for audience who don't know that's chronic lyme or post line.

Tell us what kind of treatment you obviously have lots of experience with this because you've been treating a population. Right? And also that have been that's been very similar to long Covid.

So tell the audience what you've been doing all these years for treatment. – Okay, well, so the first thing is you have to drink a lot of water, You have to drink so much water. And not only that you have to eat a lot of salt.

So what happens is the blood pools in the lower part of the body. And so when people stand up it's like they're literally not getting the blood flow all the way to the brain and you're going to feel dizzy and lightheaded and not feel good. So we want to increase the blood volume by having people drink lots of fluid. And then you have to eat lots of salt in order to help keep the blood volume in the blood vessels and not disperse out into the body or get filtered through the kidneys. And so, you know, and many times people have to have lots of salt 2-5 g of salt a day sometimes in order to keep the blood volume in the blood vessels.

That's one thing that I do. And then pharmaceutically we can do um beta blockers, which I don't really like because people feel terrible on them. They fatigued most of the time.

And so those are an option. They tend to blunt the heart rate response. I've used actually Corlinor a great deal. I find that core Eleanor is very well tolerated. It helps so much with patients who have very severe pots. There are some other medications, they're more indicated for the Ortho static intolerance or the Ortho static hypotension like mid Hedren or floor in F. And you have to work with a physician who's going to be able to prescribe those. And you know there are other things still but in terms of um in terms of other things that people can do you can use compression hose which you know in the summertime in southern California not so sexy but can really make a difference for people. Graded exercises.

And so starting with small exercise sizes exercises really help improve the resilience and also help with the venus return getting the blood flow from the legs back up to the rest of the body. So exercise is critically important for these people for rehabilitation.

And then limbic system. We're training all of the things that are going to be helpful for the mind, the mind body connection in terms of the mast cell also work for the disorder. Know MiA's.

So I would say you know Gupta Andy hopper um Primal trust um things like that. E. F. T. Joe Dispenza all of the mind body um things that would help vagus nerve stimulation can be really helpful. Those are some of my favorite things to do for pots and dysautonomia And then if it is a auto immune dysautonomia which we may not be able to identify exactly what the antibody is but L. D. N.

Would potentially be really helpful there too. – Right. Thank you. That's great. So many gems for the audience on this now, make sure you do talk to your doctor if you're experiencing those symptoms Dr. Kelly, tell them the symptoms one more time because they might they might have forgotten. – Sure. So fatigue is probably one of the biggest ones feeling dizzy. Lightheaded, you might have palpitations or feel like your heart is pounding really hard or really fast.

You might have symptoms of just muscle weakness not being able to stand very long. I'm just not feeling well at all. Nausea I think can be very common to poor appetite is probably another symptom that we hear a lot that you know you may not you may not put those two together.

I find that a lot of my young female patients when they have pots and dysautonomia they don't want to eat anything in the morning. They hate getting up in the mornings. It's very it's very hard for them.

They may not have any exercise tolerance or very little exercise tolerance. So those are some of the things that I that make me think about pots and then of course if you walk in with a heart rate of 100 I'm a little concerned.

– Right. Right. And then you know when you're talking about all these symptoms, I'm thinking about all the other things. We see that our practice. right?

The tick borne disease, the mold, the long haul in itself. How so many of these symptoms mimic each other in complex chronic illness. So speaking to the audience, make sure that you get worked up by a doctor who who's familiar with with complex chronic illness and with pots. Because it can get very confusing, which I think is why Dr. Kelly and I have both experienced a lot of these patients being turned away. We're not getting a full workout because it's not, we're now talking about um chronic illness, it's not about a goes to be anymore.

Every body is expected to act the same. Like in maybe even a heart attack or broken bones. It's not an acute model of care anymore. And so so the symptoms begin to get a little bit mismatched and can be confusing for both patient and doctor, – Yes. And for doctors who work in, you know, the primary care model where they're seeing patients every 10 to 15 minutes, there, there's no way they're going to put it all together.

Because if you start talking about anything other than those pots related symptoms, oh, I'm depressed and I'm anxious and I have oh, that's another really good symptom though, anxiety, anxiety is really, it could be a clue.

Treating POTS and Related Symptoms

I mean, if you've got anxiety and dizziness and weakness and nausea. And you don't even realize that your heart rate is high. You could have pots. And it's not actually psychological anxiety, it's that your body is trying desperately to get the blood to your brain.

– Right. And then you're just given out event or PROzac necessarily what you needed or maybe it was the only thing you needed. – Exactly, exactly. So yes, good point Dr. Nafysa this is so important to make sure that you find a practitioner who can see the whole picture and really and really look at all the different facets do a very thorough history. And hopefully with the education that you're getting on the summit, it can really help you pinpoint when the changes are happening.

I think with massive activation, it's the answers in the history. And so if you looking at um gee, you know what, I was an allergic kid and then we moved into this house and gosh, all of my allergies got so much worse and you share that with your provider, who knows what they're doing, They may be able to pick up that there was a mold exposure, there was an environmental toxin exposure living in Flint, Michigan, there might be a heavy metal exposure, you know, right? And to help you put the pieces together and certainly if you get covid and all things go

awry that that is also a big clue or get a get a vaccine that can trigger these things too.

– And this is why I always have so much fun on summits with you Dr. Kelly because we always dive into the whole picture and it's just Dr. Kelly. And I like to nerd out together on such. Yes we do.

– We are nerds. – Yes. So now Dr. Kelly tell them about what hypercoagulability is and how this relates to MCAS and long haul. – Okay so it's a big word, hypercoagulability.

But if we break it down, hyper means over amount right over activity over abundance and coagulation is clotting. So when somebody is hyper calculable their clotting excessively. Now we want to be able to clot right you cut your skin you want to form a blood clot because if you don't then you bleed out and that's not very good. But the problem is when people get covid they can make little clots. So the covid and particularly the spike protein goes into the bloodstream and it injures the inner lining of the blood vessel, the endothelium. And that causes that triggers a clot to form in some lucky people.

Not everybody gets this but many people do and some of that is tied into the way that the spike protein attaches to the endothelial. And it also triggers something called platelet activating factor.

And platelet activating factor causes platelets to clump together. And then when you get platelets clumping together you can get other blood cells and other things. Other proteins triggered that lead to the formation of a clot. It's like this beautiful dance.

Our bodies are so cool but but um when we're trying to protect ourselves sometimes are very cool systems of doing things go wacky and it causes problems where it shouldn't like making clots inside of our blood vessels and inside of our organs. And one of the medications that I mentioned earlier that route padded in, not only has that mass l stabilizing an anti histamine effect, but it's a platelet activator, pf platelet activator factor inhibitor.

So it block those platelets from sticking together which if people have a increased risk for clotting that would be a great things to take for covid for long haul covid. Let's see what else.

Other pieces of this puzzle that I'm finding with the clotting is we see a lot of hypercoagulability and increased clotting. And our line patients and arctic born patients and our mold patients because the inflammation oxidative stress all of that can trigger the blood to get sticky and thicker and in fact it's in the it's in the tick borne illness or the spirit keys.

The bacteria's advantage for us to form clots because then they can hide in the clots that can hide behind the clots. And so many of our align patients tend to be hypercoagulability as it is. We know too from the literature that some of the risk factors for a severe outcome from covid are elevated markers of the dimmer and fibrinogen and d dimmer is a marker of clotting.

Fibrinogen is an inflammatory marker related to clotting. And so those are simple tests that even non functional list and doctors can order to give people an idea if clotting could be an issue.

So I think it's really important to to look at that. And to consider that as a possible underpinning because think about it, if your blood is kind of sludgy and you're have an increased risk for clotting, you can't get the oxygen where it needs to go in the organs, you can't get the nutrients to the places that they need to be in the body and you can't get rid of the CO2 either. So it's just like it's not it's not a good thing for health and healing um and can cause a variety of different symptoms.

– So what kind of treatments do you like to give to address the clotting issues. – Can I talk a little bit about genetics? Of course. Please do. – Yes. So there are a couple of genetic risk factors for clotting. One of them is called Factor five Leiden and it's actually very common.

Hypercoagulability and Clotting in Long COVID

It's thought to be the most common genetic predisposition for clotting. And I see it in many of my patients now, you get two genes right, you get one from mom and one from dad.

And many times if you just get one you still have the increased clotting risk. And so many many of my patients just have one gene of factor five Leiden and it increases their risk of all of this. So I check it in check.

I do some screening tests and all of my patients whether they're sick or not to see if they have a hypercoagulability. Another one is called pro thrombin mutation. And again these are tests that many of you could check in 23 me you can check in a lot of the commercially available genetic tests.

And so these are these are not these are more widely available for you. Or if you find that a family member has it then you probably want to get checked.

Another gene variant that I have found to become more and more as I'm looking for is one called plasminogen activator inhibitor one or P. A. I. One so common and in fact I was doing a literature search on it. And this was probably in India or somewhere in the Middle East and they found that P. A. I. One gene variants were the most common cause of hypercritical ability in this particular population in the world.

And I think it's one that we don't look for. We don't know about. We don't test for. Most hematologist don't even know about it or test for it either. So that's one that I've been screening more people on and I find it more and more um a good screening test that I've been using, I don't know if you've been using this one is called pro thrombin fragment 11 plus two or one dot to and that one's been so helpful at pointing out if somebody is at an increased risk for clotting.

– Thank you for bringing to light the things that I think a lot of people, even functional medicine doctors at this point are not yet thinking about um because this is new, all of this, all of these issues with clotting in a larger population is new. So even the functional medicine doctors, it's not something we've been thinking about for a long time unless you've been treating Lyme and kill this for a long time. Right?

So, I'm really pleased that you're bringing this to our audience Dr. Kelly, because now the audience is going to have a list of tests to take to their doctors and hopefully the doctors are going to test those too.

Get an understanding of, if the patient is at increased risk of flooding, because it's something you need to consider now. – Absolutely. And if you have long haul covid and you have, you know, symptoms where you just kind of feel weak, you can't catch your breath.

I mean, you may not have a full pulmonary embolism or a DVT, but you could have really sludgy blood um that doesn't sound very good. Sludgy blood. – Right? Like if our nurses are pulling out of blood from our patients, we see our patients blood, it looks like cherry cola.

– Yes. Right. Yeah, exactly. – So what do you do about it? There are special enzymes, prodielliptic enzymes that will help break down that sticky blood.

So things like lumbrokinase, serrapeptidase, natokinase and depending upon the degree of stickiness might determine which one I'm going to choose. personally I like Baluch, which is lumbrokinase.

It's a special form of lumbrokinase that I think works exceptionally well. You can use a baby aspirin. It's not really going to help with the coagulation cascade aspirin is a platelet inhibitor.

So it's gonna help stop those platelets from sticking together. But it's not it's not in the same vein really. And then you can use the rupatidine that's another one.

And then working on the inflammation because it's oftentimes that inflammation that's going to trigger the coagulation cascade to be activated. – And the mast cell – And the mast cell. Exactly, – Yeah.

This has been so great, Really, really informative. And I'm just I'm so happy you're here talking to us about these things. – Thank you. Dr. Nafysa, – Thank you, Is there anything else that you want to share? – You know, I have one long haul covid patient.

She unfortunately was a mold and a Lyme patient. She'd been just getting better and then she got Covid in in March of 2020 before we knew anything. And so we've been working diligently slowly getting her health back and you know, we did all the mast cell stuff and she didn't have pots, she isn't hypercoagulable. But she was nutritionally depleted.

And so every time we layered in something like we did thyamine, high dose thyamine, we did riboflavin, we did made sure that all of her nutrients were replenished because Covid was so depleting for her.

That really helped and each time she added something and she got that much better. So it was definitely a slow process. But that really made a difference for her too. So just other things to think about this.

– I'm sorry, I'm interrupting. I'm just noticing something really interesting here. Your patient only needed nutritional support. Right? I think that's because she was your patient to begin with.

Testing and Treating Blood Clotting Issues

You already treated the underlying infections that could have flared during the side of the room, you're probably already treating mast cell activation syndrome. So what was left was this last bit that the nutritional support? Whereas I think if somebody had come in and they do write to both of us, they're not they're not already our patients, their brand new to the practice because long haul then we're not just starting at nutrients that we have to address that too. But then everything else that we've just that we do for the other patients. We have to bring that on board.

– Right. And I will admit I don't have that many long haul Covid patients. – Because – Because treating all the other things right many people many people have not even gotten sick or if they have gotten sick they recover really quickly because we're doing all the things we're treating mast cell, we're treating their underlying infections.

Yeah I can count on one hand in my practice of 1000 people in my long haul patients. – That's beautiful. Right? Our current patients aren't getting it.

They're not getting long haul is what I'm trying to say. – They're not getting long haul. – Yeah they're getting better. – They're getting better. They're dealing with all the other stuff.

But yeah I really do think unfortunately long haul covid is um is partly a response to this crazy inflammation in a person who had been on the edge but didn't know it. – I agree. – Yeah.

And you can get back you can get there but it's gonna take some work because you aren't starting it. You aren't starting at a place of um hardy constitution and good nutrition and all of the things you might have had some low level inflammation or even moderate level inflammation and didn't really realize it.

But you absolutely can. Working with good practitioners get your health and your life back. – Exactly. Thank you so much. Dr. Kelly. – Welcome. You're welcome.

Dr. Nafysa. Thanks so much for having me. – Thank you for being here and contributing.