Mast Cells Explained: Your Body's Overactive Alarm System Transcript

(Transcripts are generated by AI and may contain errors)

Introduction to Mast Cells and MCAS

Mass cells are like smoke detectors, okay? A healthy smoke detector is gonna say, there's a fire, we have an alarm, you need to know. But the problem is these mass cells can get sensitized and confused.

So then anything is setting off the alarm like perfume, for women, ovulation, even just a little bit of stress or sometimes leftover histamine in the food, that's gonna cause an alarme.

Have you suddenly developed food allergies, anxiety, skin rashes, insomnia, palpitations or reactions to things you've previously tolerated? But what if this isn't your body being broken?

What if it's actually one of your important immune cells sounding the alarm too often? Hi, I'm Dr. Jen. Welcome back to the Healthy by Dr Jen podcast.

I am a double board certified physician and today we're going to do part one in a series on mast cell and mast-cell activation syndrome known as MCAS.

This happens all the time. I'm always hearing about mast cells now. It's the new buzzword. And I have been treating mast cell and MCAS and symptoms from mast-cell for my whole career and have seen this in my office.

A lot of the times we like to give names like pots to this or endometriosis or different autoimmune skin rashes, but really we need to get to the root cause of why is your body giving these symptoms.

And I've always said symptoms are a good thing. Symptoms are gift from God telling us that something is wrong in our body.

Mast Cells as Immune Alarm Sensors

If we keep ignoring these symptoms or we're gaslit that they're normal or were told on TV that we are supposed to have these symptom, then we can't get to the root cause and then, we will have disease.

I'm also seeing a lot that conventional medicine names these symptoms as diseases. And it's like, no, you can't name a symptom a disease. That's not a real thing.

Even migraines, that is naming a of a root cause, okay, like migraines, estrogen dominance, trigger point problems, peeing on nasty birth control, all these different things.

So that's my job, and that is one of the favorite things I do when I'm working with patients. Basically, let's talk about mast cells. What are mast cell?

Mast cells, they are actually specialized immune cells They're not just allergy cells, even though when we think of how do we treat allergies, we want to stop and destroy mass cells like what they do and how they go to release histamine and everything.

But that's the problem. We are just treating the symptom. Like allergies, for example, why do we have food allergies? Well, because our gut health is not optimal and healthy.

Why do have seasonal allergies. Well gut, health and other things. So we still have to get to the root cause. Let's not call them just allergy cells. What they are, they're immune cells in our body, their neuroimmune cells, the hormone responsive cells.

They're environmental sensing cells so what if you were a mass cell, what would be your primary question that you're asking? So the primary questions is, is my environment safe?

because if it's not safe, the mast cell is going to go into action. Think of them as like a security guard for your body. And if something seems suspicious, they're going be on high alert, and then if actually something happens, then they are going go to that area.

and think about security guards, like some are more active than others, especially if they work, say, I don't know, in chicago where there's crime all the time you know when they have to be on high alert versus like a small town where everyone knows everywhere one and nothing's happening so you don't these mass cells they can be come falsely alarm and we'll talk about that later.

So where are mast cells located? And this is the very interesting part. They're actually located wherever the body interacts or interfaces with the environment.

So think of the skin. The skin is honestly such a good sign to me that something is going wrong in the So when we have skin rashes, what do people do?

They go to a dermatologist. And we've always joked as, you know, doctors, medical doctors. Dermatology is the hardest subspecialty to get into. The hardest specialty to go into and you have to be at the top of your class and everything.

It's funny because they just, if it's wet, make it dry. If it is dry, it makes it wet. Right? I'm sure we all have been to dermatologists and they just give us steroid cream and we're like, okay, thanks.

That's just suppressing my immune system. And that's what steroids do. So think about it.

Where Mast Cells Live and What They Affect

You put a steroide on a rash, it's gonna get better for a short time and then it usually comes back if you don't fix the root cause. Sometimes it doesn't come back.

that because the cause was like a temporary thing. This is why when we see people with chronic rashes such as eczema, autoimmune raches, I've treated so many of these at my office where people are like I know This isn't working.

They have a gut feeling, they have the Holy Spirit telling them like, this is not right. This is right, there's something deeper. really cool tangent case study.

When I had my brick and mortar practice in Ohio, I was the only integrative doctor in the area and I just got like all of these cases. And this was before integrator and functional medicine like exploded.

So I got all these case. Everyone went to me. It was kind of cool. I kind got a little bit of everything. This gentleman came in, hard worker, he was in his 60s, and he would get horrible rashes, then also asthma.

He was like, I'm not getting shots for this. I know something else is coming on. And I did a really good history on him. to work on some water thing like at his mother's house and it had so much mold in it and I had to like dig a little bit and talk to him about that.

So we figured out like he had a major mold exposure that was causing this mast cell histamine release causing asthma causing the skin rashes, causing him to have to get a biologic injection to stop the immune response, to start that histamine response.

So what happened? We treated him for mold, we actually got some testing and verified that, treated for him mold. put him you made sure his body knew he was safe again and then he didn't get rashes their asthma anymore and

he got off the biologic medicine yeah you know i know not very popular with these insurance companies in these pharmaceutical companies that love to sell these.

You know thousand dollars a month biologics which are you everyone's like on one for psoriasis and all this but. Yeah, I'm sorry. I mean, um, gonna help the patient get to the root cause.

gonna get the patients back into the God given homeostasis of our body and how our bodies supposed to operate. So we can do more things for the kingdom.

Amen. Right. Okay, so skin, think about this. rashes, hives, mold, rosacea, itching, flushing. A lot of the times this is activated by warm showers. If someone gets raches after warm shower, that can be an indication that they have a mast cell problem.

So mass cells are located in the gut. So think of food sensitivities. Think of esophageal reflux, think about IBS, diarrhea, nausea, all of these symptoms.

Now, this is like the parasite outbreak, the psychospora, like some people are getting it worse and I'm like, well, that's because Your gut is already inflamed and then when you get this in there your immune system, your mast cells are gonna freak out and produce diarrhea and nausea and you're gonna feel horrible.

So we gotta calm down the immune response. We gotta fix the tight junction. the gut is big. And we look at airways. This can be asthma, full-blown asthma.

We know that a lot of good treatments for asthma are supporting that. It can look like omega-3s which help with cytokines, which we'll talk about why that matters with mast cells because what mast cell secrete.

So asthma and wheezing, congestion, nasal congestion. That is a big one. especially with marcons and mold, and that has to be treated. And that is overlooked a lot.

So that's another thing. Think of airways, blood vessels. This is pot syndrome. Blood vessels and histamine, you can call it MCAS, all that, whatever you want, but it has a root cause.

Most pots I see have some mold going on. something in there. And we'll talk more maybe in part two or part three about like why, like, why it's so hard.

So make sure you subscribe so you can listen to part 2 and part 3. Now, the blood vessels.

Histamine, Receptors, and Common Symptoms

This is going to cause a vasodilation or an opening of the vessels, so, you're going get flushing, dizziness, tachycardia, and these are all like in that POTS, hypostatic ortho hypotension.

You know, where you are going to have this pack of cardio when you're laying down and getting up too fast. This is all because of that blood vessel MCAS relationship.

And then we also see some brain and nervous system responses. and this is where get that anxiety. You get anxiety with the palpitations. It's really hard.

So anxiety and brain fog. Trouble sleeping because as we'll talk about later, you are more hyper-villagent. You're more awake when you're having this neuro response to the mast cells because it is a neuroendocrine response and mast cell are part of that system.

So all of these brain fog too because there's inflammation going on in there, those cytokines being released. Think about mast cells. As I said, they're like the security guard for the body.

They're not all bad, but they are bad when they overreact. Just like anything, when we over react, it's just not good. Why do we have myself is like why did god make myself okay in our body we know that everything is good and has a reason everything that god made is god right.

So normal functions is helps defend against parasites parasites are real they are a real thing and. When we have parasites that are not treated, then that becomes a big problem.

Like if our stomach acid isn't low enough, than we are more susceptible to parasites. And so many people have poor stomach acids. They don't have low stomach enough acid.

myself help recruit other immune cells to come like if you're a security guard and something's wrong you can recruit more people to help control that situation.

help increase blood flow. We need good bloodflow. Anything that has stagnation with blood is not good. You need blood and oxygenation. So this can help wound healing.

Think about a good example is if you live in Tennessee, which I didn't know what a red wasp was until we moved to Tennessee. They are kind of terrifying.

I have not gotten bit by one, so that's good. And we have little fake dragonflies now like everywhere because supposedly that they don't like dragon flies, red wasps.

you get stung by a red wasp, okay? And what happens? There's inflammation, there's swelling, and there is increased blood flow. There is warmth. That is mast cell, that is histamine.

So a mast cells releasing histamines, one of the things it releases is his histomines. It's going there. Its bringing attention to the problem to help healing.

Now, it's not fun. it doesn't feel good, but that's why it does that. Mass cells also help signal danger. So that bug bite, you know, that's danger, something's going on, we got to bring you to safety.

And then helping communicate with the nervous system. All these are good protective characteristics of a mass cell. How they actually work. Have a Mass Cell.

Talked about they're kind of all over the body, this mass cell. Okay, so detecting possible danger becomes activated and then it degranulates so it releases all these mediators.

This is mass-celled de-granulation. And there are many things that help stabilize mast cells so they don't like degranulate and like freak out as much, right?

So it's like stabilizing something so it is not like as hard to break, like kind of like when you're packaging something, you wrap bubble wrap around it so that it doesn't break.

You're like, stabilising those things. So that's where some of the mechanisms that we'll talk about later come in. So what is inside these, these mast cells?

What's inside that? So think of a balloon, you have confetti in there, pop it and everything kind of spills out. So there's different kinds of mediators in mast cell.

There's immediate ones and histamine is the big one. And then we have triptase. heparin and tnf-alpha. TnF-Alpha is an inflammatory cytokine, but these are immediate.

Remember, it's like going to the site with immediate danger. It's protective. Okay, so I guess we should think of mast cells like they're sweet. They're trying to protect us.

But because we live in a broken world, all this signaling gets messed up and they get to hyper, like a puppy, right? And then they also have delayed mediators, further cytokines, prostaglandins, leukotrienes, and growth factors, okay?

So these mast cells are really, they're trying to protect us. We might even think of them as sweet, but sometimes too much sweet is bad. Like if you eat too many cake, that's bad, Okay, so let's talk about histamine, which everyone like gets a bad name, histamines, right?

I have a product in my store called Histaid that, you know, it helps support those mast cells in histomine and histimine response, and it works so well, while we're working on root cause or allergy support.

So histamin by itself is not bad, its information. Histamine technically, we can think of it as a neurotransmitter, We can think of it as an immune messenger, an inflammatory mediator, and even a circadian regulator sometimes.

So histamine functions include wakefulness. When you have a histamine response, I mean, a lot of people that struggle with overactive histamines problems and MCAS, they don't sleep well, right?

Because it's a neuroendocrine. It's providing that wakefulness and alertness. Because they think your body, something bad is going to happen, so it doesn't want you sleeping.

immune defense, blood flow, the stomach acid production, okay? Because we want there to be stomach acids to protect against all those parasites and everything coming in.

Mucus, because that is a defense producing all this mucus to get whatever is bad out. appetite regulation, then also some hormone signaling. So histamine, once again, it's saying, hey, something is going on here.

MCAS, Root Causes, and Why It Matters

We need attention. It's really interesting because we're going to talk about where the histamines receptors are. There's multiple different types of histimine receptors and they do different things.

This is where we have Histamine, so like histamine one blockers and histamines two are like the main ones, like where medications are kind of made. So each one receptors are found in the skin, the brain, lungs and blood vessel.

These symptoms are the itching and hives can cause some anxiety, insomnia and flushing. So this is Benadryl, okay? So when you take Benadyl and then there are some more advanced histamine, you know, H1 response, but these are more like allergy, things that we take for allergies to like stop those histamines receptors, so it helps block histamines response because the receptors when histamine binds is going to create these symptoms, okay?

Does that make sense? So we have the mast cells that are over, that're activating and degranulating and spilling histamin and then we're talking about histimines and then the receptors.

H2 receptors, this is going to be your pepsid but your Pepsid is gonna be an H-2 blocker. This is found in stomach, heart, blood vessels and The symptoms for this, if you have overactive histamine is going to be reflux, you get palpitations, increased heart rate.

So when someone comes in for an allergic reaction, okay, histamines going crazy, this is anaphylactic type reaction. In the ER, we give them IV Benadryl H1.

We give them IV Pepsid, H2. We get them steroids to shut down those other cytokines and stuff that were in the degranulation, right? We monitor them, we make sure there's not another delayed response later.

I mean, this is like bread and butter, and then sometimes we give him epinephrine, that's why you have the EpiPen, because we are trying to reverse this overactive hypervillagent response by the security guard, so okay.

So let's keep going. Histamine receptors H3 are found in the brain and the nervous system. This helps for wakefulness and neurotransmitter regulation attention.

Now, if this is overactive, you could have brain fog and insomnia, again, in that hypervillagens, and that brainfog is really bad with some patients. It's really H4 is found in immune cells, the gut and the bone marrow.

So this is where you're getting more of the chronic inflammation. You just don't know why you are inflamed all the time. And this can also affect your immune system recruitment and this just allergic disease like this chronic allergies that people have.

So mast cells, they remember they have everything in there. It's like a balloon you pop and everything goes out. So they're also covered with receptors.

They're kind of like listening for everything. Think of a ballon that has like little areas and receptors and those receptors are going to tell the balloon to self-degranulate, okay?

and their receptors they have are constantly gathering information from the environment. They're looking for IgE, which that is an allergic immunoglobulin.

They are looking at histamine, they're getting that feedback loop. they are also seeing what's going on in the environment with cortisol, mold, like everything.

So constantly kind of listening. So then we go into MCAS. So remember I said that a lot of conventional medicine names symptoms as diseases, which is fine, because then, we have something to call it, I guess, but we always have to keep, there's always a root cause.

There's a always root causes. I, with my patients, just keep digging. We're like, right now I'm doing recon on my Facebook. Did anyone go to this old junior high like 10 years ago?

Did it smell like mold? So MCAS is a syndrome characterized by inappropriate or excess mast cell activation. So this is leading to symptoms in multiple organs.

That's what it's called. And this reminds me of long haul and chronic fatigue. We're just calling it this and we're not getting to the root cause and not doing anything about it that we actually need to do.

which sometimes is just limbic system work and vagal nerve support. So MCAS is overactive mast cells and these are where you're going to have this kind of garbage bin of symptoms.

In the skin, just like we talked about, hives, flushing, rashes, dermatographia is common. in the gut, we're gonna have food reactions, another name, IBS.

We're just gonna call it things so we can prescribe pharmaceuticals. No, not nausea, diarrhea. The brain, you can get anxiety and brain fog, migraines and insomnia.

From the heart, the cardiovascular system, palpitations, dizziness, POTS, respiratory congestion, wheezing. So guess what? I named all these different organ systems, people are going to be sent to a different specialist for everything.

That's crazy. Or they're going be to sent a functional or integrative, or no, just functional doctor that can't prescribe anything because sometimes you need medications and you to do testing that you have to with a medical license.

So this is where it gets kind of crazy and people get misguided. So this can also be confusing because we have mast cells everywhere. So sometimes the symptoms are super random.

Sometimes you might go to someone and I think you're making it up. Or they're just chasing the symptom and say,

let's match a symptom not with a drug but a botanical.

I've seen that before too. So, some people too are like over-diagnosed with MCAS, I see that a lot too. I don't even give my patients this as a diagnosis.

First of all, this is like an identity for them and then they start binging MCAST reels on Instagram and like all these people not getting better. because fear can literally make your MCAS diagnosis worse.

And I see so many like colleagues even that use this, not as education, but fear-based to get on their program or see them or whatever. That's messed up.

I'm sorry. So I won't do that. So MCAS is actually recognized in medical literature, but usually targeted with a lot of pharmaceuticals, which can actually do harm too.

The goal is not to suppress mast cells forever. We don't want to do. That would be like kicking out a security guard forever just because you had one that was maybe a little bit too hyper-villagent.

No, you have to ask, why are these cells so reactive? What is going on? So, I am going to talk about, in part two, we're going talk mold, hormones, perimenopause, nervous system dysfunction, gut health.

We're gonna talk all of those, like how those are. the triggers for MCAS and why are we so reactive? So I really want you guys to share this episode with a friend just so you get knowledge and watch part two and there's probably gonna be a part three too.

And any questions you have that you want me to bring up on those other episodes, please list below. So remember, mast cells are like smoke detectors, okay?

A healthy smoke detector is going to say, there's a fire, we have an alarm, you need to know. But the problem is these mast cell can get sensitized and confused.

So then anything is setting off the alarm like perfume or for women, ovulation, even just a little bit of stress or sometimes leftover histamine in the foods, that's going to cause an alarm.

So we will go through what root causes are for this and what you can do in this series. Please subscribe, comment below. I'm so grateful for all of you and I am so glad that I got to record this, and share with you guys.