PHYSICIANS PREFERENCE
Q2 2023 • VOL. 4, NO. 2

# IS IT MCAS OR IS IT ALL IN THEIR HEAD?

"I'm allergic to everything!"

"I feel awful in general!"

"My doctor says it's all in my head."

"I have hives, but I have no idea why."

"I have period migraines."

Do these sound like common patient complaints? If so, consider ruling out **Mast Cell Activation Syndrome (MCAS)**, a complex, increasingly common and all-too-often undiagnosed multisystem disorder.

To begin peeling back the layers of MCAS, we must first understand what mast cells are and how they function. Mast cells are a type of innate immune white blood cell that inhabit nearly every tissue in the body.

Abundant in the organs that function as a first line of defense, including the GI tract, skin and lungs, mast cells play an important role in mounting appropriate allergic reactions, protecting us from infection and maintaining blood-brain barrier function. They are also found in the eyes, ears, lymphatic vessels, nervous system and bones, which explains much of the pathophysiology present in MCAS. Mast cells are necessary for appropriate immune responses, but when chronically overactivated, every system in the body goes haywire. Meet MCAS.

Mast cells have over 200 different *types* of receptors, which accounts for the numerous responses that occur when they are bound. Mast cell receptors include histamine, cytokine, toll-like, corticotropin releasing factor and hormone receptors, to name a few. There is no question why mast cells, when overresponsive to triggers, make all other systems fall in line with haywire overactivation. The mast cell's primary goal is to keep the body safe, and when *any* threat is posed to the body, mast cells react.

MCAS may be the most highly complex multisystem condition we are facing today, yet most healthcare professionals feel nowhere near equipped to recognize, diagnose or treat it effectively. So, let's discuss the root causes, clinical presentation and treatment approaches to MCAS in the modern patient.

### What Do Mast Cells Respond To?

- Everything we breathe
- Everything we swallow
- Everything that touches our skin
- Neurotransmitters
- Stress and stressors
- Hormones
- Injuries/trauma
- Medications and supplements
- Invisible energy and vibrations (i.e., EMF, Wifi)
- Pathogens
- Mold and mycotoxins
- Antigens (i.e., mold allergy)

### Clinical Challenges of MCAS

It is estimated that roughly 17% of the population and 35% of obese patients suffer from MCAS.

## HOW TO ORDER

**Call or fax your prescriptions:**

Fax 281.828.9669

Tel 281.828.9088

## NEED SUPPLIES?

For Rx sheets, product catalogs, and supportive materials, please call or email us:

281.828.9088

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## TAKE A VIRTUAL TOUR

An inside look at our new compounding labs

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**ACCREDITED**

*Physicians Preference Pharmacy is a Houston-based, PCAB-accredited compounding pharmacy serving physicians and patients since 2001. We are licensed to work with and ship to doctors and patients in 48 states (excludes NV, AL). Our standards are more stringent than those of the United States Pharmacopeia (USP). Physicians Preference Pharmacy ranks first in Houston for the number of samples sent for potency testing and in the top 8% of pharmacies nationwide.*

Symptoms commonly appear in childhood but extend well into adulthood and generally remain undiagnosed or deemed idiopathic. Chronic multisystem presentation with waxing and waning symptoms is common in MCAS, and no system is immune to MCAS, including the immune system.

Patients with MCAS are your most sensitive patients, the ones who cannot tolerate most foods, supplements or medications. MCAS patients are also the canaries in the coal mine, the first to detect mold in a building, the first to react to EMF and the first to mount an environmental allergic response or break out in hives.

MCAS is a chameleon that confounds diagnostic testing and treatments for other diseases, such as Lyme disease or other chronic inflammatory conditions without a diagnosis or a name. The severity of MCAS permanently steps up to a higher baseline following stress, so collecting a life-long history for these patients is absolutely crucial. These patients often claim to "feel awful in general" while their lab tests and scans may show them to be the "absolute picture of health." This leads to confusion and frustration for all.

### 7 Common Root Causes in MCAS

Since symptoms in MCAS patients may never look the same two visits in a row, addressing the root causes of MCAS is the best place to start in your treatment approach. Common underlying causes include:

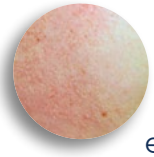
- Food triggers
- Infections and toxicity
- Genetic factors
- Nutritional deficiencies
- Hypoxia
- Hormone imbalances
- Stress and/or early trauma

## CONSTITUTIONAL SYMPTOMS HELPFUL FOR IDENTIFYING MCAS PATIENTS

- Temperature abnormalities, cold most of the time or low-grade fever, spontaneous sweating
- Fatigue/malaise, unable to get out of bed, often waxes/wanes
- Unprovoked sweats, more often at night (common on the back)
- Hot flashes
- Impaired healing ability
- Brain fog
- Decreased appetite and early satiety
- Fluctuations in blood pressure
- Dizziness leading to loss of consciousness
- Dramatic and abrupt weight loss/gain
- Pruritis affecting different areas (common in anal area), may be aquagenic (hot more common)

### Clinical Presentation in MCAS

Due to the multisystem presentation of MCAS, symptoms often wax and wane in the MCAS patient. Symptoms of MCAS tend to show up in areas of first-line defense and where mast cell populations are most dense. Here are some of the most common findings:

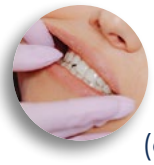


*Integumentary:* Rashes, flushing, hives, migratory patches of erythema, acne-like folliculitis, brittle and dry hair with cycles of thinning/loss, brittle nails, nails with white spots, Janeway lesions, severe sun intolerance

*Ocular/ Ophthalmologic:* "Burning," "sandiness," "grittiness," itchy and dry eyes, blepharospasm (eyelid trembling)

*Otologic:* Unilateral or bilateral tinnitus (even in deaf patients), vertigo, hearing loss

*Sinonasal:* Environmental allergies, congestion, postnasal drip, idiopathic nosebleeds, rhinosinusitis



*Oral/Pharyngeal:* Prematurely crumbling teeth (despite good hygiene), Burning Mouth Syndrome, excessive mucus production, trouble swallowing

*Respiratory:* Hoarseness, laryngitis, cough (usually dry), wheezing (often diagnosed as asthma), COPD, dyspnea, patchy ground-glass infiltrates in the lungs

*Lymphatic:* Lymphatic enlargement, waxing/ waning and migrating swollen lymph nodes

*Neuropsychiatric:* Waxing/waning numbness, memory and word recall problems, trouble concentrating, dysautonomia, anxiety, panic, depression, paranoia, obsessive-compulsive, sleep dysregulation, chronic weakness, changes in senses (hearing, vision, taste, smell)

*Blood and bone:* Too few/too many RBCs, WBCs, platelets, coagulability (hematologic abnormalities are common because mast cells are made in the bone marrow)

*Immune system:* Frequent infections, persistent low-grade infections, deficiencies in IgG, IgM, IgA

*Long-haulers:* MCAS-induced brain fog, cognitive impairment, excessive fatigue (common for those either vaccinated or naturally exposed to SARS-CoV-2)

*Histamine intolerance:* Unexplained hives, migraines (due to vasodilatory effect of histamine), heart racing following meals, unexplained congestion, anxiety, panic attacks, dermatographia, insomnia

**Histamine Connection to MCAS**

Histamine is an important mediator that is regularly released from mast cells to participate in the inflammatory process, vasodilation, HCl release for digestion and as a chemical messenger to the brain. Most, though not all, MCAS patients exhibit histamine intolerance.

*MCAS is recognized as the number one driver of histamine intolerance*. Conditions perpetuating histamine intolerance include gluten sensitivity, estrogen dominance, leaky gut, gut infections, IBD, mold sensitivity or mold exposure, and EMF sensitivity.

If patients are sensitive to histamine, they should avoid high-histamine foods and beverages like red wine, avocados, spinach, pickled foods, leftovers and foods cooked in a Crockpot.

**Treatment Approach**

MCAS patients should be treated gently in a stepwise fashion. The following approach helps to ensure elimination of triggers, calming of mast cells and symptom resolution:

1. Identify patient's individual triggers (i.e., foods, stressors, mold).
2. Perform genomic analysis evaluating detoxification, inflammation and drug response.
3. Minimize/eliminate high-histamine foods temporarily and give H1 and H2 blockers if the patient has trouble breaking down histamine.
4. Check the gut first for infection, parasites, and *H. pylori* but don't treat them until you see Step 5.
5. Evaluate how the patient pushes out toxins through urine, bowels and sweating (see Step 6).
6. Detox the patient gently (dry brushing, castor oil packs, IR saunas/blankets, improved excretions, Epsom salt baths).
7. Use binders for biotoxins and provide liver support.
8. Choose low-histamine probiotics (*Saccharomyces boulardii, Lactobacillus rhamnosus*).
9. Stabilize mast cells.
10. Address other symptoms such as pain, inflammation, flares and unresolved trauma.

**Compounded Medications**

A primary goal of MCAS treatment is mast cell stabilization. However, supporting the immune system, gentle detoxification, hormone balance and combating biotoxin illness are equally important.

When choosing medications and supplements for MCAS patients, bothersome inactive ingredients such as dyes, artificial colors and flavors, magnesium stearate, corn starch, potassium sorbate, sodium benzoate and titanium dioxide should be avoided. Although this is not a complete list, nor does every MCAS patient have sensitivities, patients generally react adversely to the inactive ingredients present rather than to the active ingredients.

Patients should not be discouraged from using medications and supplements as part of their treatment plan. Instead, they should be encouraged to recognize which dyes, binders or fillers are bothersome for them. Medications for MCAS patients should be compounded free of such ingredients whenever possible.

## COMPOUNDS WE OFFER TO ADDRESS MCAS

*Compounded H1 Blockers:*

- Loratadine 13.5mg capsule - 2 capsules PO in the morning and 2 capsules in the evening
- Diphenhydramine **SR** 60mg capsule - 1 capsule PO every 6-8 hours
- Brompheniramine **SR** 7mg capsule - 1 capsule PO every 6-8 hours
- Chlorpheniramine **SR** 10mg capsule - 1 capsule PO every 6-8 hours
- Hydroxyzine **IR** 10mg or **SR** 60mg capsule - 1 capsule PO every 8-12 hours while awake
- Ketotifen 0.5mg or 1mg capsule - 2 capsules PO daily

*Compounded H2 Blockers:*

- Famotidine 18mg capsule - 2 capsules PO in the morning and 2 capsules in the evening

*Sirolimus 5mg Capsule*

Sirolimus is an mTOR inhibitor, anti-inflammatory and strong promoter of autophagy. Sirolimus mimics intermittent fasting in the body and improves

bowel movement and regularity in MCAS patients, improving their detoxification pathways.

- Sirolimus 5mg capsules - 1 capsule by mouth just once weekly

*Progesterone SR in Veggie Capsules*

Bioidentical progesterone is important for balancing estrogen dominance and supporting appropriate diamine oxidase (DAO) enzyme production, which is made in the gut and aids in the breakdown of histamine. Estrogen binds to mast cells, increasing the release of histamine. During times of estrogen dominance, supplementing with progesterone helps to manage histamine as well as migraines related to hormone fluctuations. Hormones are shown to be effective in roughly 90% of patients who receive hormone therapy.

*Salicylic Acid 0.3% Mouthwash*

Burning Mouth Syndrome may occur as a result of hormone imbalance and mast cell overactivation. Salicylic Acid Mouthwash is helpful for resolving oral pain, lowering inflammation and retaining moisture in the oral tissue. It is a safer alternative to the anticonvulsants and antidepressants commonly prescribed for this condition. Quantities of 150ml and 300ml available.

- Salicylic Acid 0.3% Mouthwash - rinse with 5 ml for 1-2 minutes then spit out, use once to twice daily

*Low Dose Naltrexone (LDN)*

LDN reduces mast cell activity, downregulates cytokines, decreases inflammation and promotes endorphin release. Patients generally tolerate a one-month titration starting at 1.5mg daily and increasing by one capsule every 10 days until 3 caps daily is reached.

- LDN 1.5mg capsule
  Days 1-10: 1 cap PO QD
  Days 11-20: 2 caps PO QD
  Days 21-30: 3 caps PO QD
  (target dose typically 4.5mg QD)

*Biotoxin-Binding Nasal Sprays*

Patients with cancer, mold toxicity and MCAS often harbor biofilms and biotoxins in the nasal cavity, which may be multiple antibiotic-resistant coagulase negative staph (MARCoNS). Biofilms can be broken down with a combination spray that includes an antibacterial, antifungal and chelator. Testing for sensitivity to gentamicin can help determine which formula to use for your patients.

- Mupirocin 0.2%/Itraconazole 0.08%/EDTA 0.5% nasal spray - 1-2 sprays in each nostril daily (16ml bottle)
- BEG-I (Mupirocin 0.2%/ EDTA 0.5%/Gentamicin 0.5%/ Itraconazole 1%) nasal spray - 1 spray in each nostril 3 times daily (24ml bottle)

*Cromolyn 200 mg capsule*

- 1 capsule PO 30 mins prior to each meal and before bedtime

**How We Can Help**

It is important to set realistic expectations with all patients. MCAS patients in particular must understand that mast cells are not the bad guys, but they must be tamed to function normally. Symptoms are expected to improve from baseline; however, recovery may take years. Making appropriate lifestyle changes is crucial for symptom improvement.

MCAS patients are your most sensitive patients, and they deserve an intentional regimen and encouragement for healing. At Physicians Preference Pharmacy, we are here to support you and your MCAS patients by providing pure compounded medications. Please reach out to us to obtain protocol information, patient intake questionnaires for MCAS, and MCAS Rx Order Forms. Call the pharmacy to speak with any pharmacist about MCAS treatment today!

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