Mast Cell Activation Syndrome (MCAS)

From papers, a book, and recorded interviews (phrases & quotes) by expert Lawrence Afrin M.D. who writes: MCAS is the **"root cause of the modern epidemics of chronic inflammatory diseases".**

Mast Cell Activation Syndrome – M C A S – has only recently been articulated. In my 40 years in holistic health this is the most exciting, unifying theory that has turned up.

Mast cells arose some 500 million years ago and were the initial defense mechanism; they are in all tissues that have blood cells. Their primary function is as sentinels.

MCAS seems to be the root cause for many diseases involving inflammation — which is ubiquitous. MCAS arises from interaction of environmental factors with inherited risks – and affects all body systems. Lawrence Afrin, MD, writes that there is a "genetic fragility factor". When there is interaction with a stressor, stem cells in the bone marrow undergo mutations; some 50 are known. These then filter down to the mast cells. That's how they get damaged and begin releasing some 200 known mediators. The theme is allergies and intolerance, but this inappropriate production and release go well beyond allergy. Fatigue is the #1 complaint, pain the 2nd. However, there is extreme variability from one person to the next, including within families.

Hints show up in childhood. Then, more medical problems, usually inflammatory, turn up in any part of the body. They are often incurable, but medications like Benadryl and Valium can help damp-down runaway mast cell activity. There are sudden escalations after a major stressor — and a new baseline is set. The dysautonomia gets worse.

Histologic evidence is not obvious, so diagnosis is generally by looking at the variety and totality of symptoms. Also, there is a complicated 24 hour urine test which can diagnose MCAS. Porphyria may often be considered as a diagnosis because of all the sensitivities and reactions. Sometimes titers are up a little bit if a person is reacting a lot. But it's not actually porphyria. Happens with other conditions including some of the Lyme disease co-diagnoses.

Therapies try to control and ameliorate the aberrant mast cell mediator production and release. Unfortunately, there is no way to predict which

medications will work in which patient — so doctors usually start with over-the-counter H1 and H2 blockers — like Zyrtec and Pepcid.

Over time, patients learn to make adjustments in their lives to accommodate the growing list of symptoms. One of the trickiest ones is a feeling of wooziness when standing — a pre-syncope; luckily most patients don't actually faint.

Fatigue is a major complaint, and chronic fatigue syndrome has been linked to mast cell disease.

Widespread sensitivities to chemicals/drugs, foods, and environmentals are a hallmark of MCAS. One can cut down on drug reactions by having medications compounded with inert substitutes like baby rice cereal.

Microbes like viruses and bacteria can cause the initial insult and trigger mast cell mediator release, as can foods, environmentals, and chemicals/drugs.

Other triggers can include physical stimuli such as pressure, trauma, exercise, heat, cold, ultra-violet light, electrical stimuli, and EMFs. As the latter are rapidly increasing, expect to see more patients with MCAS. Its now in 20% of the general population and much higher in patients of holistic practitioners who often get them after they have fruitlessly seen many doctors. However, as Afrin wrote in an email: "I cannot overemphasize that it *cannot* be the case that MCAS is what's at the root of every case of idiopathic chronic multisystem inflammation/allergy/dysplasia".

There can be flares in spring and fall due to pollen.

Wounds can be slow to heal, and there's a variety of skin conditions.
Also alopecia.

Eye symptoms include: lacrimentation, conjunctivitis, lid tremor, tics, and sometimes difficulty focusing.

Otitis media is the most common ear symptom, especially in children. Adults are more likely to have hearing loss, tinnitus, or hyperacusis.

Mast cells are found at the body's environmental interfaces. Highest concentrations are in the sino-nasal cavities and passages, often leading to

chronic congestion and post-nasal drip — which, according to my UC sleep consultant, can be a cause of Central Sleep Apnea. Afrin muses that some type of mediator release could be responsible for Obstructive Sleep Apnea by relaxing the throat muscles.

One of the most unexpected symptoms is major dental decay, even with good hygiene.

Fluctuating levels of sterile inflammation can be found in the lungs — resulting in shortness of breath, wheezing, and a diagnosis of "reactive airways disease".

Cardiovascular symptoms include: palpitations, tachycardia, and unprovoked episodes of hyper- or hypotension. Swollen blood vessels are reported to be the underlying factor for rapid blood pressure changes. Mast cells are a source of norepinephrine, which is a major vasoconstrictor.

Also — there is chest pain without ECG evidence. Mast cell action is not detectable by present methods — so you get told: it's all in your head.

GI inflammation — usually sterile — migratory abdominal pain, diarrhea and/or constipation; occasional obstruction. Nausea and vomiting. Pancreatic enzymes can be helpful. Hepatic impact is found in about half of the patients, including sterile hepatitis.

Esophagitis manifests as chest discomfort and reflux.

Interstitial cystitis is often treated as UTI in women and prostatitis in men. Dr. Afrin opines that antihistamines could be a good treatment for endometriosis.

Migratory aches and pains are common — often leading to a diagnosis of osteo- or rheumatoid arthritis, fibromyalgia, and or poly myalgia rheumatic. But it is not — it is the body reacting to rogue mast cell mediators.

Osteoporosis is a MCAS symptom, and patients with this condition should have their case taken and be tested for it.

Afrin believes that mast cell dysfunction "may be at the heart of many idiopathic pain syndromes, such as chronic low back pain". The pains may not

be responsive to analgesics — some of which actually trigger the pains of mast cell activation.

Neuropsychiatric findings. Mast cells are near nerves, so activation can cause a wide range of neurological and psychiatric findings — dizziness, light headedness, weakness, vertigo, pre-syncope; dysautonomia, or POTS; tingling/numbness, parasthesias, tics; seizure disorders. Possible involvement in MS, ALS, and Alzheimer's. Sleep disorders include apnea. Cognitive and mood disturbances, irritability, anger, depression, bi-polar, ADD, anxiety and panic disorders, and frankly psychotic ones.

Brain fog and word finding difficulty are common. Also PTSD. Autism is nearly an order of magnitude higher in patients with mastocytosis.

Hypothyroidism is common, and linked to increased mast cells in the marrow. Hyperthyroidism is seen less often. Either way, anti-thyroid antibodies are often detectable.

There is a clear association with obesity, diabetes, and metabolic syndrome.

Often there are elevations in total cholesterol and low-density lipoproteins — and decreases in high density and very-low-density lipoproteins.

Cancer — mast cells can be involved in many stages from poor healing to cancer causing mutations; from suppression of immune surveillance to their presence in tumors. Also, they are involved in angiogenesis and in directing T cell differentiation and migration. However, trying to kill mast cells with cancer medications is not productive.

Seems like Mast Cells are involved with everything.

Here is a good one sentence definition from Dr. Afrin: "Mast Cell Activation Syndrome presents with chronic multi-system polymorbidity, an inflammatory theme; and it waxes, wanes, and cycles with different periods and amplitudes."

Patients can often identify a specific point in their lives when their health took a distinctive turn for the worse — an acute — a stressor of some sort — be it a disease, an accident, or a new antigenic exposure like travel.

Patients live a life of chronic un-wellness, accruing more and more diagnoses of unclear etiology with sub-optimal response to therapy.

Elevated levels of mast cell mediators are not usually detectable unless there is a major flare up. But a good case history will reveal the unusual, odd, weird, bizarre, or strange conditions — highlighted by sensitivities or "allergies" to foods, environmentals, and chemicals/medications.

Management takes patience and ingenuity — starting with avoidance of triggers and desensitizing therapies. These should be aimed at reduction, rather than specific to the area manifesting symptoms, because the errant mast cells could be firing from a different location than the symptom.

Antihistamines are the first line of defense — begin with OTCs. Start with a low dose and give it time. Resist multiple therapies because you won't know which one worked OR which one made it worse.

Benzodiazepines are very helpful in damping down reactions. Using them every 8 to 12 hours at a very low dose is mentioned by Afrin.

NSAIDs including aspirin are on the first line of defense. Benadryl is a good histamine H1 receptor blocker and is reported to be highly effective — as are loratidine fexofenadine, cetirizine, and levocetirizine. Starting dose on the box is 10 mg per day, but patients find it more effective every 12 or even 8 hours — at full or half dose. NSAIDs can also trigger mast cell disease; often it's the excipients rather than the pure drug.

Quercetin is potentially useful, although not well absorbed.

Pepcid & Tagamet are good H2 blockers — preferably the non-colored pills, though white ones may just be bleached.

Salt loading can be helpful if the patient has pre-syncope.

Elimination diets can be helpful — but you still have to control the underlying mast cell disease. So don't get caught up in chasing symptoms.

Exertion can clearly trigger a flare of mast cell activation — something most doctors do not appreciate — so they are always telling people to exercise. Be

very careful and very gentle. For example, chronic fatigue syndrome can be set off for days, weeks, or longer, by an activity which exerts that specific patient.

Mitigation ranges from nutrition and nutricuticals to OTCs, and then to prescribe medications. While not curable, the activated state of mast cells can be tempered in many ways. Once toned down, a person can improve greatly no matter their genetic pre-disposition and co-diagnoses. However, these other diagnoses must be treated appropriately. Not every medical problem in a MCAS patient is caused by MCAS — though it is hard to segregate them, especially as inflammation is ubiquitous and can have more than one cause. In any case, if you damp down mast cells, the body has a better chance of healing the other conditions.

Lifespan will probably be normal but mildly to severely impaired without correct diagnosis and effective treatment. With diagnosis and treatment as described, life can be more tolerable.

Remember that most inflammation found in MCAS is sterile — non infectious. Tests don't turn up a pathological cause — but nevertheless the inflammation is definitely there. So, resist antibiotics when recommended "just in case" by a provider just because he/she could not find a pathogen.

In closing to quote Afrin: "Clinical presentation of MCAS in any given patient is entirely dependent on which mediators are being aberrantly released — in which amounts — at which times — in which durations — and at which sites — in that patient."

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Please don't circulate this paper as there are a lot of phrases borrowed from Afrin. Do your own research and write your own revelation of this major cause of "modern inflammatory conditions", many of which have been confounding practitioners since the creation and release of major new stressors such as chemicals and now EMF/RFRs.