

## Mast Cell Mediator Release Syndrome Questionnaire

Patient name \_\_\_\_\_

Date \_\_\_\_\_

Age \_\_\_\_ Date of birth \_\_\_\_\_

**Answer all of the following symptoms/questions, even if they are only slightly bothersome, rarely occurring (for instance, not necessary present currently but in the past), or may seem not be related to your main problems.** Contact your doctor if you have difficulty completing the questionnaire.

Check (✓) inside the box if the statement applies to you.

If the statement applies to you, enter the intensity level when it was present the last time it occurred on the line next to the box. Please use the range of 1 (very mild) to 10 (unbearable) to reflect the level of your discomfort.

1      2      3      4      5      6      7      8      9      10

### CONSTITUTIONAL

**Applies   Intensity**

Significant physical weakness or fatigue doing everyday activities       **1**      \_\_\_\_

Extreme fatigue attacks, so it is hard to keep eyes open       **1**      \_\_\_\_

At times I lose weight despite maintaining my normal diet       **1**      \_\_\_\_

Complaints of any type **including** others below are worsened by:

Sleep deprivation (awake for more than 24 hours).....       **1**      \_\_\_\_

Hunger or fasting (no food all day).....       **1**      \_\_\_\_

High histamine foods (such as red wine, cheese, chocolate, tuna, cured fish/meat, left-over meat).....       **1**      \_\_\_\_

Alcohol consumption.....       **0**      \_\_\_\_

Physical exertion.....       **0**      \_\_\_\_

Heat.....       **0**      \_\_\_\_

Cold.....       **0**      \_\_\_\_

Stress.....       **0**      \_\_\_\_

### EYES/EARS/NOSE/MOUTH

The following occur repeatedly or may be constant:

Ears have ringing or odd sounds and/or            \_\_\_\_

Eyes are dry, itchy, red, burning, or feel gritty and/or            \_\_\_\_

Runny nose or stuffy nose and/or            \_\_\_\_

Inflammation or ulcers of the mouth            \_\_\_\_

Score 1 if one or more is present.       **1**

## CHEST and HEART

The following occur repeatedly or may be constant:

Burning and/or pressure pain in the chest and the heart tests were normal (electrocardiogram and/or stress test)  **1**    \_\_\_

Rapid heart rate (palpitations)  **1**    \_\_\_

Redness or flushing of the skin, especially face or upper body  **2**    \_\_\_

Hot flashes (these usually last 2 to 5 minutes and rarely 10 minutes and are often accompanied by nausea or other symptoms; these are not hot flashes of menopause)  **2**    \_\_\_

Sudden dizziness/lightheadedness with fainting or near faint     \_\_\_

Sudden temporary increase in blood pressure     \_\_\_

Score 2 if one or more is present.  **2**

I have seen evidence for pulse and blood pressure changes using my digital watch device

## LUNGS

The following occur repeatedly or may be constant:

Irritable dry cough or need to cough and/or     \_\_\_

Feeling of shortness of breath or difficulty taking a full breath and/or     \_\_\_

Asthma-like complaints (wheezing)     \_\_\_

Score 1 if one or more is present.  **1**

## ABDOMEN

The following occur repeatedly or may be constant:

Nausea (with or without vomiting)  **1**    \_\_\_

Pain in the abdomen  **1**    \_\_\_

Character of pain: burning  **1**    \_\_\_

Character of pain: crampy or spastic  **1**    \_\_\_

Character of pain: it is associated with diarrhea  **1**    \_\_\_

Marked attacks of visible bloating or distension within minutes (up to around 10 minutes)  **1**    \_\_\_

A surgeon told me that adhesions (scar tissue) were seen during my very first laparoscopy or abdominal/pelvic surgery

## URINE/PELVIS

The following occur repeatedly or may be constant:

- Bladder and/or pelvic pain (this applies to women and men) and is often associated with painful, frequent and/or urgent urination and may be associated with pain during sex.  **1**    \_\_\_
- During these times bacterial cultures and urine analysis are normal.
- I have had these symptoms but have not seen a doctor to order tests.

## NEUROLOGIC

The following occur repeatedly or may be constant:

- Headaches (may be throbbing on one side only or have previously been diagnosed as a migraine)  **1**    \_\_\_
- Brain fog – word finding problems and/or concentration difficulties with or without associated insomnia episodes.  **1**    \_\_\_
- Neuropathy: leg pain or arm pain and/or altered feelings (numbness, tingling, pins and needles). This does not respond to over-the-counter pain medicine.  **1**    \_\_\_

## SKIN – see last page for photograph examples

The following occur repeatedly or may be constant:

- Hives (red raised itchy spots)  **1**    \_\_\_
- Itching with or without skin changes  **0**    \_\_\_
- Itchy skin lesions that look like acne in the corners of the nasal-lip area, as well as, the chin and forehead during attacks  **1**    \_\_\_
- Itching in area around the anus during attacks  **1**    \_\_\_
- Painless, non-itchy swelling (especially lips, cheeks, eyelids)  **1**    \_\_\_
- Reddish-brown spots and/or knots under the skin  **2**    \_\_\_
- Hemangiomas ("blood sponges")  **1**    \_\_\_

## HEMATOLOGIC

The following occur repeatedly or may be constant:

- Bruising after minor injuries     \_\_\_  
and/or  
Unusual nose bleeds     \_\_\_  
and/or  
(Women with significantly increased menstrual bleeding)     \_\_\_  
Score 1 if one or more is present.  **1**

**BONE**

- Bone pain that usually occurs in more than one bone  **1**
- Bone density test showed osteoporosis or osteopenia and/or
- Whole-body nuclear scintigraphy showed areas of increased bone metabolism without a known cause
- Score 1 if one or both is/are present.  **1**

**General Questions**

- Do you get colds regularly which then turn into bacterial infections such as bronchitis or sinus infections?  **1**
- Is your illness episodic or comes with attacks?  **1**
- Have symptom-free periods become shorter?  **1**
- Any degree of relief of nausea by taking antihistamines (examples: diphenhydramine, loratadine, cetirizine)?  **1**
- Do you know with relative certainty the beginning of your gastrointestinal and/or other complaints that is linked to a memorable event (infection, stress, environmental change, etc)?

If yes, when and which events? \_\_\_\_\_  
\_\_\_\_\_

Have your parents, siblings and/or children had similar diseases or syndromes to yours (such as intestinal complaints, food intolerances, pulmonary complaints, allergies, migraine-like headache, pains in various systems without apparent cause, skin changes, hives, itching, runny nose, recurring eye irritation, ringing in the ears, tendency to bruise)?

List these affected relatives: \_\_\_\_\_

List of your medications, vitamins, and supplements used regularly or as needed:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Medicine allergies/reactions:

\_\_\_\_\_  
\_\_\_\_\_

Food allergies/reactions: \_\_\_\_\_

\_\_\_\_\_

Environmental reactions (odors, temperature, lights, etc.): \_\_\_\_\_

Mold exposure: \_\_\_\_\_

Tick bite history: \_\_\_\_\_

Weight: \_\_\_\_kg (or \_\_\_\_pounds); Height: \_\_\_\_cm (or \_\_\_\_ feet and \_\_\_\_ inches)

### SKIN PHOTOGRAPHS

Hives



Acne-like lesions



Spider-like veins



Reddish-brown spots



Knots under skin



Hemangiomas



## Laboratory Data

At least once during the disease phases there was:

	<b>Applies</b>
Hyperbilirubinemia up to about 2.5 mg% with the exclusion of Meulengracht/Gilbert's syndrome or another hereditary disorders	<input type="checkbox"/>
Increase in transaminases:	
$\gamma$ GT and/or	<input type="checkbox"/>
ALT and/or	<input type="checkbox"/>
AST and/or	<input type="checkbox"/>
Score 1 if one or more is present.	<input type="checkbox"/> <b>1</b>
<i>AST increased &gt;10 fold (subtract 1 point and look for other diseases)</i>	<input type="checkbox"/> <b>-1</b>
Hypercholesterolemia (patient must be normal or underweight)	<input type="checkbox"/> <b>1</b>
Low titer autoantibodies without a corresponding organ symptom	<input type="checkbox"/> <b>1</b>
<b>Mast cell mediators:</b>	
Tryptase in serum was normal	<input type="checkbox"/> <b>0</b>
Tryptase was marginally increased	<input type="checkbox"/> <b>3</b>
Tryptase increased >2 times the upper limit	<input type="checkbox"/> <b>10</b>
Histamine in plasma was normal	<input type="checkbox"/> <b>0</b>
Histamine was marginally increased	<input type="checkbox"/> <b>3</b>
Histamine increased >2 times the upper limit	<input type="checkbox"/> <b>10</b>
Prostaglandin D2 in plasma was normal	<input type="checkbox"/> <b>0</b>
Prostaglandin D2 was marginally increased	<input type="checkbox"/> <b>3</b>
Prostaglandin D2 increased >2 times the upper limit	<input type="checkbox"/> <b>10</b>
Heparin and/or factor VIII in plasma was/were normal	<input type="checkbox"/> <b>0</b>
Heparin and/or factor VIII was/were elevated (and bleeding disorders were excluded).	<input type="checkbox"/> <b>3</b>
Chromogranin-A in serum was normal	<input type="checkbox"/> <b>0</b>
Chromogranin-A was increased (and other causes were excluded)	<input type="checkbox"/> <b>3</b>
Leukotriene E-4 in urine was normal	<input type="checkbox"/> <b>0</b>
Leukotriene E-4 was marginally increased	<input type="checkbox"/> <b>1</b>
Leukotriene E-4 was 10 times the upper limit	<input type="checkbox"/> <b>5</b>
Leukotriene E-4 was >10 times the normal limit	<input type="checkbox"/> <b>10</b>
N-methylhistamine in urine was normal	<input type="checkbox"/> <b>0</b>
N-methylhistamine was marginally increased	<input type="checkbox"/> <b>1</b>
N-methylhistamine was 10 times the upper limit	<input type="checkbox"/> <b>5</b>
N-methylhistamine was >10 times the normal limit	<input type="checkbox"/> <b>10</b>

- |   |                                    |
|---|------------------------------------|
| 2,3 Dinor 11b PG F2 alpha in urine was normal                   | <input type="checkbox"/> <b>0</b>  |
| 2,3 Dinor 11b PG F2 alpha was marginally increased              | <input type="checkbox"/> <b>1</b>  |
| 2,3 Dinor 11b PG F2 alpha was 10 times the upper limit          | <input type="checkbox"/> <b>5</b>  |
| 2,3 Dinor 11b PG F2 alpha was >10 times the normal limit        | <input type="checkbox"/> <b>10</b> |
| <hr/>   |                                    |
| Other conspicuous laboratory findings (please name with values) | <input type="checkbox"/> <b>0</b>  |

### **Procedures and Imaging**

Esophagogastroduodenoscopy or associated biopsies had:

- |   |                                    |
|---|------------------------------------|
| no pathological findings  | <input type="checkbox"/> <b>0</b>  |
| or  |                                    |
| mild inflammation   | <input type="checkbox"/> <b>1</b>  |
| or  |                                    |
| Helicobacter pylori-negative and NSAID-negative erosions<br>and/or ulcers                     | <input type="checkbox"/> <b>3</b>  |
| or  |                                    |
| diffuse and/or focal mast cell infiltrates $\geq 20$ /hpf with rounded shape                  | <input type="checkbox"/> <b>5</b>  |
| or  |                                    |
| Mast cell nests and/or sheets of spindle-shaped mast cells<br>and/or CD25-positive mast cells | <input type="checkbox"/> <b>10</b> |

Colonoscopy and associated biopsies had:

- |   |                                    |
|---|------------------------------------|
| no pathological findings  | <input type="checkbox"/> <b>0</b>  |
| or  |                                    |
| mild inflammation   | <input type="checkbox"/> <b>1</b>  |
| or  |                                    |
| focal and/or disseminated dense infiltrates of<br>morphologically inconspicuous mast cells    | <input type="checkbox"/> <b>5</b>  |
| or  |                                    |
| Mast cell nests and/or sheets of spindle-shaped mast cells<br>and/or CD25-positive mast cells | <input type="checkbox"/> <b>10</b> |

Diseases and disorders below should be excluded in order help confirm the presence of a mast cell disorder. Symptoms in some organ/tissue systems can be similar in both. Evaluate both checklists and the numerical values listed to the right of each box. Add together to get a sum. The data should be entered by the physician.

**Sum 9 to 13** = pathological activation of mast cells as cause of complaint is assumed.

**Sum  $\geq 14$**  = diagnosis of mast cell mediator release syndrome is clinically confirmed.

**Sum of points:** \_\_\_\_\_ **Diagnosis: mast cell mediator release syndrome** □

Differential diagnosis and testing for disorder that may have similar symptoms as mast cell activation

**Endocrine disorders**

Diabetes mellitus (laboratory determination)  
Porphyria (laboratory determination)  
Hereditary hyperbilirubinemia (genetic testing)  
Thyroid disorders (laboratory determination)  
Fabry disease (clinical picture, genetic examination)

**Gastrointestinal disorders**

Helicobacter-positive gastritis (gastroscopy, biopsy, urea breath test, fecal antigen)  
Infectious enteritis (stool examination)  
Parasitoses (examination)  
Inflammatory bowel disease (endoscopy, biopsy)  
Celiac disease (laboratory determination, biopsy)  
Lactose, sucrose, or fructose intolerance as an independent disease (history, breath tests)  
Microscopic colitis (endoscopy, biopsy)  
Amyloidosis (fat biopsy, rectal biopsy)  
Adhesions, volvulus, and other intestinal obstructions (history, physical, imaging studies)  
Hepatitis (laboratory determination)  
Cholecystitis (imaging studies)  
Median arcuate ligament syndrome (auscultation, CT angiography with deep expiration views)

**Immunological and neoplastic diseases**

Carcinoid tumor (laboratory determination, octreotide imaging)  
Pheochromocytoma (laboratory determination)  
Pancreatic endocrine tumors [gastrinoma, insulinoma, glucagonoma, somatostatin, VIPoma]  
(Lab determination, imaging studies, endoscopic ultrasound)  
Food allergy/sensitivity (history, special investigations of the biopsies, elimination diet)  
Hypereosinophilic syndrome (laboratory determination)  
Hereditary angioedema (family history, laboratory determination)  
Vasculitis (clinical picture, laboratory value determination)  
Intestinal lymphomas (imaging studies)