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

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:

Hyperbilirubinemia up to about 2.5 mg% with the exclusion of Meulengracht/Gilbert’s syndrome or another hereditary disorders

Increase in transaminases:
- γGT and/or
- ALT and/or
- AST and/or

Score 1 if one or more is present.

AST increased >10 fold (subtract 1 point and look for other diseases)

Hypercholesterolemia (patient must be normal or underweight)

Low titer autoantibodies without a corresponding organ symptom

Mast cell mediators:
- Tryptase in serum was normal
- Tryptase was marginally increased
- Tryptase increased >2 times the upper limit
- Histamine in plasma was normal
- Histamine was marginally increased
- Histamine increased >2 times the upper limit
- Prostaglandin D2 in plasma was normal
- Prostaglandin D2 was marginally increased
- Prostaglandin D2 increased >2 times the upper limit
- Heparin and/or factor VIII in plasma was/were normal
- Heparin and/or factor VIII was/were elevated (and bleeding disorders were excluded).
- Chromogranin-A in serum was normal
- Chromogranin-A was increased (and other causes were excluded)
- Leukotriene E-4 in urine was normal
- Leukotriene E-4 was marginally increased
- Leukotriene E-4 was 10 times the upper limit
- Leukotriene E-4 was >10 times the normal limit
- N-methylhistamine in urine was normal
- N-methylhistamine was marginally increased
- N-methylhistamine was 10 times the upper limit
- N-methylhistamine was >10 times the normal limit
2,3 Dinor 11b PG F2 alpha in urine was normal □ 0
2,3 Dinor 11b PG F2 alpha was marginally increased □ 1
2,3 Dinor 11b PG F2 alpha was 10 times the upper limit □ 5
2,3 Dinor 11b PG F2 alpha was >10 times the normal limit □ 10

Other conspicuous laboratory findings (please name with values) □ 0

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**Procedures and Imaging**

Esophagastroduodenoscopy or associated biopsies had:

- no pathological findings □ 0
- or mild inflammation □ 1
- or Helicobacter pylori-negative and NSAID-negative erosions and/or ulcers □ 3
- or diffuse and/or focal mast cell infiltrates ≥20/hpf with rounded shape □ 5
- or Mast cell nests and/or sheets of spindle-shaped mast cells and/or CD25-positive mast cells □ 10

Colonoscopy and associated biopsies had:

- no pathological findings □ 0
- or mild inflammation □ 1
- or focal and/or disseminated dense infiltrates of morphologically inconspicuous mast cells □ 5
- or Mast cell nests and/or sheets of spindle-shaped mast cells and/or CD25-positive mast cells □ 10
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 ≥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)