

STAPHYLOCOCCAL ENTEROTOXIN B

Background:

Staphylococcal enterotoxin B (SEB) is part of a family of enterotoxins commonly implicated in food poisoning. SEB has been weaponized in the past and has an estimated effective incapacitating dose (ED₅₀) of 0.0004 ug/kg and an estimated LD₅₀ of 0.02 ug/kg by inhalational route of exposure.

Incubation Period:

Since this is an inhaled toxin, there is not a true incubation period. The onset of action is estimated to be 3 to 4 hours, after which the victim may be severely incapacitated by illness.

Signs/Symptoms:

- 1) Constitutional: Fever and myalgias may occur 8 to 20 hours after exposure.
- 2) Pulmonary: Cough, dyspnea, rales, pulmonary edema and pleuritic chest pain may occur 4 to 15 hours after exposure.
- 3) Cardiac: Tachycardia may be seen and closely parallels fever.
- 4) CNS: Headache is a common symptom of a significant exposure.
- 5) GI: Nausea, anorexia and vomiting are common symptoms from inhalational exposure.
- 6) Severe exposures may lead to septic shock and death.

Laboratory and Diagnostic Testing:

Notify the local department of public health and IDPH of any suspected SEB release and to receive further instructions.

- 1) CXR for possible pulmonary edema, baseline labs
- 2) 12 to 24 hours post exposure, enterotoxin may be identifiable from nasal swabs of affected patients.
- 3) Diagnosis may be confirmed by specialized immunosorbant assays on tissue or body fluid samples. The assays test for the presence of enterotoxin.

Treatment:

There is no antidote for SEB. Supportive care is the mainstay of treatment.

- 1) Fever: Antipyretics.
- 2) Pulmonary: Standard therapy including oxygen, bronchodilators, diuretics and airway support and control as needed.
- 3) GI: Fluids and anti-emetics as needed.