Serotonin (5HT) Toxicity

Serotonin toxicity is often only mild to moderate in severity, but severe toxicity can be life-threatening, primarily due to complications from hyperthermia.

**Clinical features:**
- Triad of mental status changes, autonomic stimulation and neuromuscular excitation
- **Mild:** tremor, tachycardia, inducible clonus (ankle, ocular), hyperreflexia
- **Moderate:** agitation, sustained clonus, tachycardia, hyperthermia (>39 deg C)
- **Severe:** severe hyperthermia, muscle rigidity, sustained clonus and seizures

**Mechanisms of ↑5HT (more than one may apply):**
- Inhibition of 5HT metabolism (MAOIs)
- Prevention of 5HT reuptake (SSRIs, TCAs, tramadol)
- 5HT release (cathinones, MDMA, amphetamines)

**Severe Serotonin Toxicity usually results from a combination of >1 mechanism of 5HT excess**

**Management**
- Supportive care is the mainstay of management: *IV hydration, titrated benzodiazepine sedation, discontinuation and avoidance of serotonergic agents, aggressive treatment of hyperthermia*
- Discuss cases with severe hyperthermia OR those involving a MAOI with a clinical toxicologist

**Hyperthermia**
- Aggressive cooling (if T >38.5): along usual treatment lines, may require intubation and paralysis

**Anti-5HT agents (NOT indicated in minor toxicity):**
- *Chlorpromazine:* 25 mg IV in 1000 mL 0.9% N/Saline over 1 hour
- *Cyproheptadine:* administered orally or via NGT. 12 mg loading dose and repeat 2 mg 2 hourly until adequate therapeutic response is achieved (maximum 32 mg over 24 hours)
- *Olanzapine:* 10 mg SL/PO

**Disposition:**
- Toxicity usually resolves over 24-48 hours. Discharge when symptomatically well.

**Hunter Serotonin Toxicity Criteria:**
- **Exposure to a serotonergic agent**
- **Spontaneous clonus**
- **Inducible clonus OR ocular clonus**
- **Agitation**
- **Diaphoresis**
- **Hypertonia AND temp > 38 Celcius**
- **Not significant serotonin toxicity**
- **Tremor AND hyper-reflexia**
- **Serotonin toxicity**