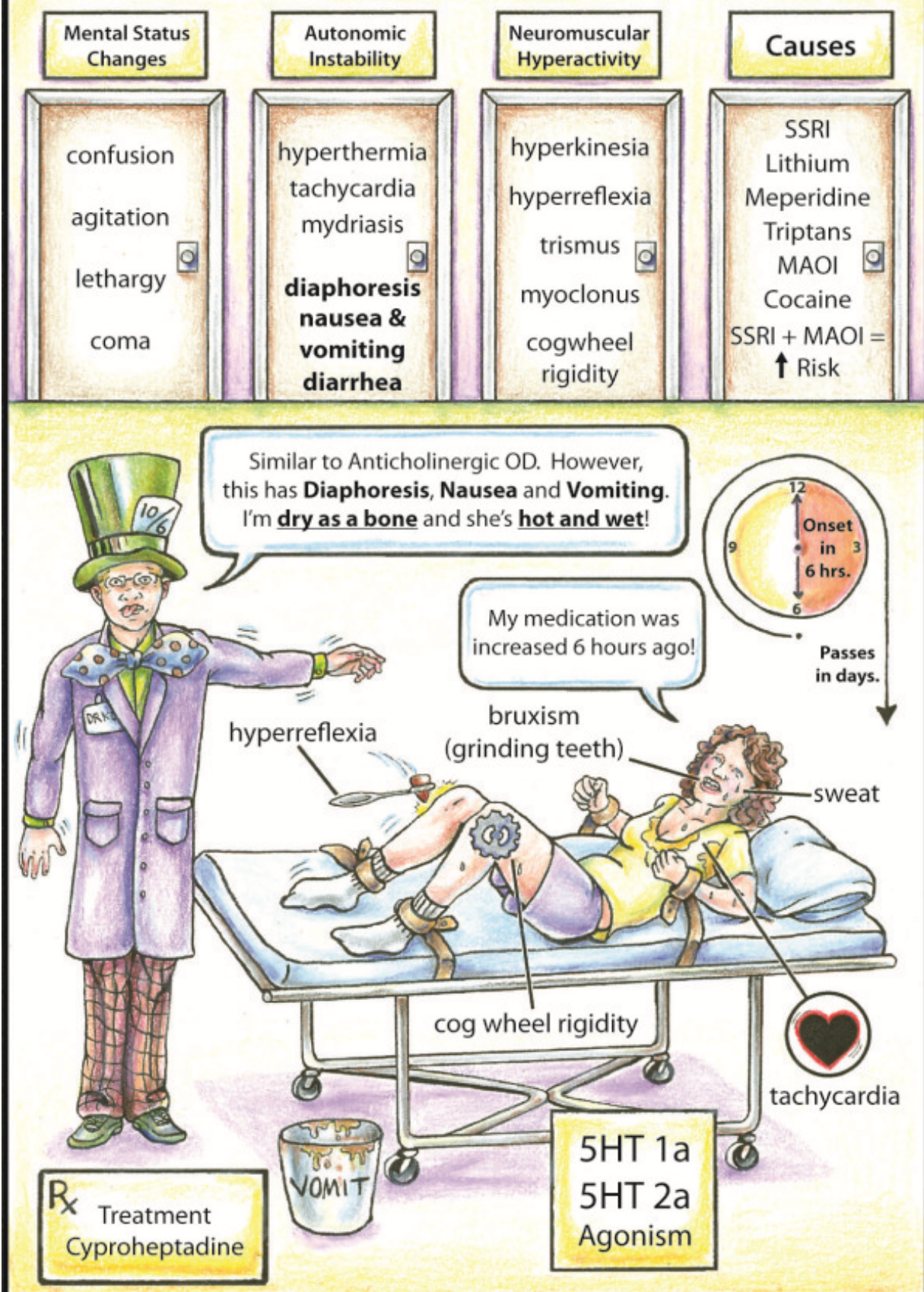


# TOXICOLOGY

## SEROTONIN SYNDROME

### Serotonin Syndrome



### **Mental Status**

- Confusion
- Agitation
- Coma

### **Vital Signs**

- Hyperthermia
- Tachycardia
- Hypertension
- Tachypnoea

### **Other Manifestations**

- Diaphoresis, flushing
- Mydriasis
- Tremor
- Myoclonus & clonus
- Hyperreflexia
- Rigidity
- Trismus
- Diarrhoea & vomiting
- Increased bowel sounds
- Rhabdomyolysis

### **Toxic agents (typically > 2 agents)**

- SSRIs
- MAOIs
- TCAs
- Triptans
- Tramadol
- Amphetamines & MDMA
- Cocaine
- L-tryptophan
- Linezolid
- Dextromorphan

**Pathophysiology:** excessive stimulation of serotonin receptors via a variety of mechanisms

- Direct stimulation of receptors (triptans).
- Increased synaptic serotonin release (amphetamines, cocaine, dextromorphan).
- Increased abundance of serotonin precursors (L-tryptophan).
- Decreased serotonin reuptake (SSRIs, TCAs, tramadol).
- Serotonin receptors are widespread in the CNS and PNS and serotonin helps regulate attention, mood, appetite, autonomic activity and motor tone.
- In the PNS enterochromaffin cells secrete serotonin to increase GI motility.
- Systemic serotonin is stored in platelets where it promotes platelet aggregation & vasoconstriction. Other systemic effects include bronchial & uterine contraction.

### **Treatment**

- ABC and supportive management.
- Benzodiazepines for agitation and muscular relaxation.
- Cyproheptadine (serotonin receptor antagonist & histamine receptor antagonist). Consider in severe cases: give 12mg orally followed by 4-8mg every 6 hours.
- Intravenous fluids for rhabdomyolysis.