



### **Mental Status**

- Hypervigilance
- Agitation
- Hallucinations
- Delirium (mad as a hatter)
- Coma

### **Vital Signs**

- Hyperthermia (hot as a hare)
- Tachycardia
- Hypertension
- Tachypnoea

### **Other Manifestations**

- Dry, flushed skin (red as a beet)
- Dry mucous membranes (dry as a bone)
- Mydriasis (blind as a bat)
- Reduced bowel sounds
- Urinary retention
- Myoclonus, choreoathetosis
- Picking behaviour
- Rhabdomyolysis

### **Examples of toxic agents**

- Antihistamines
- Antipsychotics
- Tricyclic antidepressants
- Antiparkinsons agents
- Antispasmodics
- Phenothiazines
- Atropine

### **Pathophysiology**

- Postganglionic parasympathetic fibres exert their actions via muscarinic receptors in smooth muscle and secretory glands.
- Nicotinic receptors are present in autonomic ganglia of both the sympathetic and parasympathetic systems.
- Nicotinic receptors also mediate the effects of the somatic nervous system at skeletal muscle neuromuscular junctions.
- Anticholinergic drugs predominantly act on muscarinic receptors by competitively inhibiting the binding of acetylcholine. They are therefore “anti-parasympathetic”.
- Sympathetic post-ganglionic fibres are usually adrenergic rather than cholinergic. Sweat glands are an exception as sympathetic fibres are cholinergic – this explains why the skin is dry in patients with anticholinergic poisoning.
- Muscarinic receptors in the CNS are affected if the drug can pass the blood brain barrier. Acetylcholine in the CNS regulates arousal, attention and motivation.

### **Treatment**

- Supportive measures including cooling
- Benzodiazepines for agitation or seizures
- Sodium bicarbonate for QRS prolongation