Psychiatric Disorders that Can Kill

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Disclosure

- Bioxel
Objectives

- Neuroleptic malignant disorder
- Serotonin syndrome
- Anticholinergic poisoning
- Catatonia
- Excited delirium

Neuroleptic Malignant Syndrome

- Incidence is .02-3%
- Seen with typical antipsychotics but seen with all classes including atypical and some anti-emetic
- Can be seen with single dose, after tx for years, assoc with rapid dose escalation, switching agents, parental administration
- Associated with dehydration
- Seen in Parkinson patients with change in dose, switching agents, infection and surgery.
- Thought to be due to dopamine receptor blockade & genetic predisposition
- Progresses over 1-3 days
### Neuroleptic Malignant Syndrome

#### Symptoms
- AMS-agitated delirium, confusion, catatonic, confusion, encephalopathy and death
- Rigidity-lead pipe, superimposed tremor, dystonia, opisthotonus, trismus, chorea
- Hyperthermia temp >38 C
- Autonomic instability – tachycardia, labile or high blood pressure, tachypnea, dysrhythmias, diaphoresis

#### Laboratories
- Profound increase in CPK from 1000–100,000 IU/L
- Non-specific
  - Leukocytosis
  - Increase in LDH, Alk Phos, Liver transaminases
  - Electrolyte ABN-hypocalcemia, hypomagnesia, hypo and hypernatremia, metabolic acidosis
  - Myoglobinuric acute renal failure
  - Low iron concentration
Neuroleptic Malignant Syndrome
Atypical Cases

- Lower potency agents or early diagnosis
- Rigidity may be milder or absent
- May have two of the three symptoms

Neuroleptic Malignant Syndrome
Treatment

- Stop offending agent
- Supportive care
- Hydration
- Electrolyte imbalance
- Lower fever with cooling blankets
- Lower blood pressure
- Heparin or LMWH for DVT prevention
- Benzos
- Dantrolene, bromocriptine, amantadine or other meds
- ECT?
Serotonin Syndrome

- Increased serotonin in CNS
- All age including peds
- Initiation or increased dosage from 6-24 hrs. prior
- Medications
- Variable presentations-mild to life threatening

Serotonin Syndrome
Autonomic

- Diaphoresis
- Tachycardia
  - Dramatic swings
- Hyperthermia
- Hypertension
  - Dramatic swings
- Drug mucous membranes
- Vomiting
- Diarrhea and increased bowel sounds
Serotonin Syndrome
Neurological

- Ocular clonus
- Tremor
- Akathisia
- Hyperreflexia
- Muscle rigidity
- Bilateral Babinski
- Agitation
- Restless
- Disoriented

Evaluation

- Clinical diagnosis
- Hunter criteria – spontaneous clonus, inducible clonus, ocular clonus, tremor, hypertonia
- Consider
  - DIC
  - Rhabdomyolysis
  - Metabolic acidosis
  - Myoglobin
  - ARDS
Management

- Discontinue all serotonin agents
- Supportive care
- Sedate with benzodiazepines
- Antidote
  - Cyproheptadine
- Not recommended – olanzepine, bromocriptine, dantrolene

Catatonia

- Incidence of 10%
- Not a separate disorder
- Psychiatric disorders
  - Seen in psychotic, autism spectrum disorder, delirium
  - More common in major depression or bipolar disorder
- General medical conditions
  - Case reports of up to 100 medical conditions
  - Infectious, metabolic, neurologic or rheumatologic disorders
- Causation
  - Hypothesis that it is related to pathways that connect basal ganglia and cortex
  - Genetic predisposition
Catatonia

- Immobility
- Mutism
- Stupor
- Resist attempts to be moved
- Waxy flexibility
- Posturing
- Excessive, purposeless motor activity
- Staring
- Echolia and Echopraxia

Catatonia Sub-Types

- Retarded
  - May appear alert and aware of environment
  - Reduced activities
- Excited
  - Excessive and purposeless motor activity in upper and lower extremities, restlessness, impulsivity, frenzy, combativeness
- Malignant
  - Life threatening
  - Elevated or labile BP
  - Tachycardia, tachypnea, diaphoresis
  - Non-specific labs
  - May progress from one to another
Catatonia
Diagnosis

- Minimum of two of four signs for several hours
- No signs are pathognomic
- Lorazepam challenge
  - IV 1-2 mg
  - Partial, temporary relief of symptoms 5-10 min after administration
  - 20% may not respond at all

Excited Delirium Syndrome

- Subtype of delirium
- Recognition as a disorder
- Incidence of death <10%
- Associated with stimulants
  - Cocaine
  - Methamphetamine
  - PCP
- Psychiatric disorders
- Chrematistic loss of striatum of chronic cocaine abusers
- Disorder of dopamine neurotransmission
Excited Delirium Features

- Males
  - Approx. 30 years old
  - Resistance to physical strength
  - Superhuman strength
  - Impervious to pain
  - Continued struggle
  - Tachycardia
  - Tachypnea
  - Hyperthermia
  - Hypertension
  - Acidosis
  - Rhabdomyolysis

Excited Delirium Treatment

- Physical struggle leads to catecholamine release and metabolic acidosis
- Treat agitation
  - Haloperidol
  - Ketamine 5 mg/kg IM
- Treat hyperthermia
- Hydration
- Sodium bicarb?
- Check and treat rhabdomyolysis and hyperkalemia
Anti-Cholinergic Syndrome
Causative Agents

- Antidepressants – TCA, SSRI
- Antihistamines
- Antiparkinsonian meds
- Antipsychotics
- Antispasmodics
- Belladonna alkaloids
- Mydriatics
- Muscle relaxers
- Plants – Jimson weed, mushrooms

Central
- Fever, agitation, delirium, coma, restless, disorientation, confusion, auditory and visual hallucinations, incoherent speech

Peripheral
- Tachycardia – 120-160 + dysrhythmias
- Dry skin
- Dry mouth
- Ileus with decreased bowel sounds
- Urinary retention
- Hyperthermia
Anti-Cholinergic Syndrome Treatment

- Observation
- Monitoring
- Supportive
- Activated charcoal
- Sedation with benzos, restraints not recommended
- Avoid phenothiazines
- Sodium bicarbonate for wide complex tachycardia
- Physostigmine use is controversial and not recommended for diagnostic challenge

Take Home Messages

- There are a number of psychiatric disorders that can cause death unless it is identified early
- NMS and SS features of these syndromes may overlap making diagnosis difficult. However, NMS is characterized by 'lead-pipe' rigidity, whilst serotonin syndrome is characterized by hyperreflexia and clonus.
- Medication side effects of treatment in the emergency setting may be lethal
- Need high index of suspicion
Contact Information

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