



# Poison HOTLINE

1-800-222-1222

March 2019



## Did you know .....

In a medication overdose, it is pertinent to identify any medications that are modified release. The term *modified-release* describes medicines that alter the timing and/or the rate of release of the drug. Variations of modified-release products include: enteric coated (common abbreviation: EC), repeated action, prolonged action, delayed action/release, sustained release (SR or LA), and extended release (ER, XR, XT, or CD).

Modified release medicine may cause a delay in onset of symptoms and an extended duration of effects. The IPCC's treatment recommendations and observation times will depend if a medicine is immediate release or delayed release.

## Drug-Induced Hyperthermia

*An increase in core body temperature can be caused by disorders other than drug toxicity (e.g. sepsis, infection, malignancy, rheumatologic). The underlying mechanisms and treatments of these other disorders are different than what is discussed here. This article discusses **only** hyperthermia related to toxins.*

Drug-induced hyperthermia (DIH) can be very harmful and potentially fatal if not recognized early and properly treated. It can cause permanent neurologic problems such as cognitive abnormalities or a cerebellar syndrome (ataxia, dysarthria, etc). The excessive heat can be generated from seizures, muscular excitability or rigidity, metabolic rate increase, impaired sweating with impaired heat dissipation (e.g. anticholinergic agents), or uncoupling of oxidative phosphorylation.

The five major DIH syndromes and some of their causes are:

- 1) Sympathomimetic Syndrome (methamphetamine, synthetic cathinones)
- 2) Anticholinergic Syndrome (antihistamines, TCAs, neuroleptics)
- 3) Serotonin Syndrome (SSRIs, SNRIs, MAOIs, lithium, tramadol)
- 4) Neuroleptic Malignant Syndrome (antipsychotics, dopamine antagonists)
- 5) Malignant Hyperthermia (inhalation anesthetics, succinylcholine)

**DIH** with a **core** body temp > 40°C (104°F) is a **MEDICAL EMERGENCY**.

### Treatment of Drug-Induced Hyperthermia

Prompt recognition and rapid cooling within 30 minutes or less is crucial.

- Measure **CORE** body temperature (rectal, intra-bladder or intra-vascular).
- If needed, intubate and paralyze the patient to control the airway and to stop any further heat generated by muscle use.
- The fastest way to bring down body temp is ice water immersion.
  - Stop when **core** temp gets below 38.7°C (101.7°F).
- Continue monitoring **core** temp.
- Treat the underlying cause of hyperthermia. There may be specific therapy for certain causes (e.g. dantrolene for malignant hyperthermia).
- Cooling methods like ice packs to axilla and groin, cold water or rubbing alcohol sprays, the use of fans or any combination will lower the body's core temp, but at a rate **significantly slower** than ice water immersion.
  - Stop when **core** temp is 38.0°C (100.4°F).

Susie Eades, RN, CSPI  
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