



Poison HOTLINE

1-800-222-1222

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Did you know

The amount of nicotine in the liquids for electronic cigarettes is variable. E-liquid or e-juice can contain anywhere from 0 to 36 mg of nicotine per 1 cc of liquid. E-liquid refill bottles come in 5 to 30 cc sizes.

Knowing the nicotine concentration of the e-liquid is important when determining how much nicotine is too much for a child. If the nicotine concentration is unknown, use the highest concentration when calculating total amount of nicotine ingested.

For comparison, the IPCC recommends ER referral for pediatric patients ingesting ≥ 1 whole cigarette or approximately 8 mg of nicotine.

Neuroleptic Malignant Syndrome

Neuroleptic Malignant Syndrome (NMS) is a syndrome that can be life threatening. NMS is associated with many antipsychotic medications, including haloperidol, aripiprazole, clozapine, olanzapine and risperidone. The signs and symptoms of NMS are more often seen with therapeutic use than in an overdose.

Diagnosis of NMS

The Journal of Clinical Psychiatry (72(9):1222-8, 2011) uses the following criteria to make a diagnosis of NMS and the Diagnostic and Statistical Manual, 5th Edition (DSM 5) also references these criteria:

- Exposure to a dopamine antagonist, or withdrawal of a dopamine agonist, within past 72 hours
- Fever: $> 100.4^{\circ}\text{C}$ ($>38.0^{\circ}\text{C}$), orally, on at least 2 occasions
- Muscle rigidity
- Mental status changes: decreased or fluctuating level of consciousness
- CPK elevation ≥ 4 times the upper limits of normal
- Negative work-up for infectious, toxic, metabolic and neurologic causes
- Sympathetic nervous system lability defined as 2 or more of the following:
 1. BP increase (SBP or DBP $\geq 25\%$ above baseline)
 2. BP fluctuation (≥ 20 mm Hg DBP change or ≥ 25 mm Hg SBP change in 24 hours)
 3. Diaphoresis
 4. Urinary incontinence
- Hypermetabolism: heart rate increase ($\geq 25\%$ above baseline) AND respiratory rate increase ($\geq 50\%$ above baseline)

Treatment of NMS

Symptomatic and supportive care is the mainstay of treatment. Provide basic life support, initiate cooling measures and give IV fluids. Control of agitation will help decrease the patient's temperature and benzodiazepines are first-line treatment for this. Follow laboratory studies for acidosis, renal and liver function, and muscle breakdown. A dopamine agonist, such as bromocriptine, or muscle paralysis may be necessary to control the patient's symptoms.

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