

A brief review of some strange and unusual poisoning in children



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Dear Editor

Acute pediatric poisoning is still considered as a universal health problem. This indicates a relatively common reason for children hospitalization in emergency units. Evidence shows an incidence rate of 0.33% to 7.6% for children poisoning (1).

Children aged 1–5 years are at the highest risk for poisoning and this age range includes 80% of all pediatric poisoning cases (1). While household products and cleansers are the most responsible agents for poisonings in children aged 2–3 years, the medications left open or kept in the cupboard are the most common causes of poisoning in children aged 3 to 5 years (2).

Noticeably, only small amounts of some medications may lead to severe toxicity in children (3). For example; although toxic dose is estimated to be about 10–20 mg/kg for TCA (three cyclic anti-depressants), only one pill may cause severe toxicity or only one pill of drugs in Calcium channel blockers class may cause severe toxicity in children under three years of age. This also can be related to the severe salicylate toxicity following the consumption of even as much as a phalange of methyl salicylate gel in a toddler.

The Clinical Toxicology Center in Imam Reza hospital in Mashhad is the referral center of poisonings in the East of Iran and many cases of poisoned children are referred to this center and some cases are admitted.

In this letter we report some specific, strange and unusual poisonings in children admitted in our center.

Table 1 shows unusual and strange poisonings in

children. It is important to mention that this table can be updated over time. Physicians should be aware of these unusual condition and management options that are recommended.

We should never use vacuum cleaners to clean mercury. The vacuuming will put mercury into the air and increase exposure. Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them. Never pour mercury down a drain. After cleanup: Remember to keep the area well ventilated to the outside (i.e., open windows and turn on fans in the exterior windows) (4).

Authors' contributions

All of the authors participated in data collection, analysis and writing this article

Ethical Issues

This investigation was approved by the Ethics Committees of Mashhad University of Medical Sciences.

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Table 1. Characteristic of some unusual poisonings in children

| Poisoning Group | Name of poisonous substance/drug | Drug/substance compound / Indication of use | Toxidrome (main clinical symptoms) | Management |
|---------------------------------------|---|--|---|---|
| Skin and hair care products | Shampoo | Sodium Lauryl Sulfate, sterol, starch sulfate | GI irritation | There is no need for action except carpet shampoo that is considered caustic and the person should be referred to a gastroenterologist. For moderate to severe Irritant effects of bathing shampoo medical supportive treatment is needed or refer the patient to a gastroenterologist. |
| | Hair conditioners | Bathing materials | GI irritation and nausea | Symptomatic treatment- if symptoms are severe (acid and alkali injury) |
| | Soap | Bathing materials | GI irritation and nausea | Symptomatic treatment |
| | Oxidizing liquid for hair dye | H2o2 | GI irritation | Supportive measures |
| Solvents and House building materials | Absorbent materials silica gel | Silicium oxide-cobalt chloride (blue)(rare) | GI stimulation | Preventing GI irritation and inducing vomiting |
| | Instant drop glue | Hydrocarbon | | Cleansing from the tooth ^a |
| | Acetone | Nail polish cleaner | GI symptoms - hyperglycemia | H2blocker for 7 to 10 days |
| | Plastic based paint and oil based paint | Building painting. Hydrocarbon | GI stimulation –There are considerable amounts of lead in paints in Iran. | Supportive care- H2 Blocker/PPI |
| | Oil paint thinner | Hydrocarbon | Gastrointestinal stimulation | Supportive care- H2 Blocker/PPI |
| | Oil varnish | Hydrocarbon | Gastrointestinal stimulation | Supportive care- H2 Blocker/PPI |
| | Silver oil | Hydrocarbon | GI stimulation | Supportive care- H2 Blocker/ PPI |
| | Polyester | Xylene (dimethylbenzene) | Headache, fatigue, Nausea, burning eyes and nose | Supportive care- H2 Blocker/ PPI |
| | Acetylene | Hydrocarbon | Dizziness - headache - mild epigastric pain | Similar to hydrocarbon poisoning |
| | Fluorine (1000 to 5000 PPM) and hydrofluoric acid | Industrial use and health care material | Severe lung and burn injuries in the eye-ulcer in the respiratory tract Hypocalcemia and hypomagnesemia | Wash with plenty of water - rubbing magnesium oxide - calcium gluconate |
| | Formaldehyde | It is used in manufacture of resins and textiles, as a disinfectant, and as a laboratory fixative or preservative. Formaldehyde solution may contain methanol in some degree | Corneal burn- and mouth burn nausea and vomiting | Rinse eyes and skin with plenty of water-measures to deal with methanol poisoning |
| | Potassium polyacrylate | Water absorbing materials in agriculture | Nausea and vomiting | Supportive treatment |
| | Building Gypsum | Chalk mixed with water | GI symptoms and obstruction | Surgical consultation and supportive measures |
| Dead building plaster | Plaster wall | GI stimulatory symptoms | Supportive measures | |
| Dishwasher tablets | Detergent ingredients. Alkaline builders. Surfactants. Chlorine compounds and bleaching agents. Perfumes. Alkaline salts and oxidizing agents | Caustic injury | Supportive care- High dose H2 Blocker/PPI. Refer to a gastroenterologist | |

Table 1. Continued

| Poisoning Group | Name of poisonous substance/drug | Drug/substance compound / Indication of use | Toxidrome (main clinical symptoms) | Management |
|-------------------|---|---|---|--|
| | Oven cleansers | Water, sodium hydroxide/potassium hydroxide/lithium hydroxide, surfactant, a humectant | Caustic injury (high potent alkaline) | Supportive care- High dose H2 Blocker/PPI. Refer to a gastroenterologist |
| | Glassware cleansers | Different composition but mostly: Isopropyl alcohol, Monoethanolamine, Butyl glycol | Irritation, ketosis may occur | Supportive care for GI irritation |
| | Hand sanitizer | There are two main classes of hand rubs: Alcohol based and non-alcohol based. alcohol based hand rubs are recommended by WHO. Ethanol, isopropanol, normal propylene, benzalkonium chloride, skin softener and other additives are ingredients of Dermosept (a common hand rub) | Low blood sugar, coma and seizure | Alcohol poisoning management (Airway protection, control of hypoglycemia, control of seizure and other supportive care (4) |
| Plants | Anemone | | Delusions | Cancerous measures |
| Cosmetic products | Perfume | Fragrant essential oils or aroma compounds, fixatives and solvents | Signs of toxicity of ethanol and methanol | Surface measurements and appropriate therapeutic measures |
| | Cosmetics | Often lead free or contains small amount | Stimulatory symptoms | Supportive measures |
| Miscellaneous | Mercury thermometer | Elemental Mercury | GI stimulatory symptoms | If it is consumed orally no further attempt is needed but it recommended to Clean up mercury spills |
| | Watch battery | Manganese dioxide - citric acid-mercuric acid and zinc | Gastrointestinal irritation | Chest and abdomen and internal consultation for endoscopy |
| | SIM card | Metal content- bond wire | Brief digestive symptoms | Supportive measures |
| | Lady- bug | | Stimulatory symptoms | Supportive measures |
| | Lizard | Some kinds may include cyanide contents in their body structure | GI irritation | Supportive measures |
| | Sulfur match, Wooden match or match stick | Sulfur and phosphorus | Gastrointestinal irritation | Supportive measures |
| | Firecracker | Gunpowder | Mouth and stomach ulcers | Supportive measures: Treatment similar to caustic injury management if symptoms are severe |

^a If drop glue causes the teeth to be stuck together, it should be cleansed with vinegar, and if it stuck to the fingers, it should be removed with acetone. If the lips are stuck or the mouth mucous membrane adheres, the patient should be NPO and TPN be initiated until the glue is gradually dissolved by saliva and the adhesion bands released.