



## POISONINGS IN CHILDREN

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### Abstract

**Introduction:** The poisoning problem is acute, complex and multifaceted. The child poisoning is dangerous and may jeopardize their lives.

**Purpose:** the present literature retrospective study was to list information about the poisoning in pediatric patients.

**Methodology:** The study material has recently been articles on the topic were found mainly in the electronic database Medline and the Association of Greek Academic Libraries (HEAL-Link).

**Results:** The poisonings in children occur at home, especially in the kitchen, at school and in the countryside. Poisoning of a child, usually when there are symptoms like restlessness, disturbances of consciousness, hallucinations, convulsions, bleeding, vomiting and diarrhea or skin lesions.

**Conclusions:** Parents or caregivers of children need to know about the poisoning, the signs and symptoms, prevention and what to do when the child presented intoxication.

**Keywords:** poisoning, children, prevention and treatment

## INTRODUCTION

The problem of poisoning is intense. It is also applied worldwide with particular exacerbation in developed countries. It is a very complex and multi-faceted issue. The main reason for the increase of poisonings around the world is the enormous and, often, the uncontrolled number of medicinal products and poisonous substances that are on the market. People use them at home and work. If air contaminants are added, then the whole image size will be out of control. [1,2]

In particular, in 2007, the National Poisons Information Service in Greece recorded 33,851 calls, of which 28,132 were related to poisoning and 5,719 were questions about poisoning and other medical issues. There were 1,151 (3.4%) cases of poisoning caused by pesticides and children of pre and primary school age (5-10 years) outnumber (2.3%). [1, 3]

Poisoning in children is a dangerous situation that it may endanger their lives. Young children have the innate tendency to explore everything. So, each and every substance and medicines, which should not have been within their reach, can be put in their mouth and be swallowed; these substances may come in to contact with the kid's skin or eyes. [4]

Poisonings at a high rate (80%) occur in kids under the age of 5 (usually 1-3 years). The most common poisonings in young children (1-3 years) occur because kids come into contact with household substances (70%), while poisonings in preschoolers are often due to medicine intake (65%). Although parents are very scared of poisonings, fortunately, poisonings in children are rarely fatal. [5]

## **PURPOSE**

The purpose of this retrospective study is to identify the information about the effects of poisoning in children, as well as the prevention and treatment of poisoning in children.

## **METHODOLOGY**

The study material used for this study was the latest articles on the topic that were found mainly in the electronic database Medline and the Association of Greek Academic Libraries (HEAL-Link), with the following keywords: poisoning, children, prevention and treatment. Exclusion criterion of articles was the language, other than the Greek and English

## **POISONINGS**

*Poison* is every substance that will enter the human body in any way. It is harmful, and it may cause temporary or permanent functional lesions that can even cause death.[6]

*Poisoning* is defined as the disturbance of vital functions of an organism after exposure to a substance. This substance enters the human organism via a variety of routes including inhalation, oral intake, parenteral administration or dermal contact. The poison can be found in solid, liquid or gaseous state. It may also be household bleaches, paint thinners, or herbicides that can cause chemical burns or internal injuries if they are swallowed. [7]

The poisoning treatment aims at the stabilization of the patient's condition by the selection of the appropriate therapeutic measures. Any delay in treatment, may cause unpleasant effects that can even be fatal for the sufferer. [8, 9]

*Pharmaceutical poisoning* is roused due to improper or incorrect use of medicinal products and poisonous substances. There are several drugs whose ingredients can be very harmful if they are consumed in large quantities or for no reason. The individual's imprudent or improper use of these medicines shoulders the blame of poisoning and not their healing properties.[10]

The most common poisonings are caused through the digestive tract by the ingestion of a toxic substance which follows the same route with food. The most common case is the "food poisoning", which is due to the consumption of products that are contaminated or spoiled. As a result, gastroenteritis is usually caused. [9]

Poisoning in children often occurs at home (mainly in the kitchen), at school, in the countryside. Parents or children's caregivers need to be informed about the signs and symptoms of poisonings, poisoning prevention and the measures that must be taken in case of a poisoning in a child.[1,11]

## **POISONINGS IN CHILDREN**

The signs of poisoning in children are often the cases when 12]:

- You see your child keep some harmful substance.
- There is an indication that there are some missing pills or syrups
- The child, himself, says that he took a substance. You must investigate this possibility.
- There are symptoms such as restlessness, disorders of consciousness, hallucinations, seizures, bleeding, vomiting, diarrhea, skin lesions.

The most common substances that are responsible for childhood poisonings are [13, 14]:

- *Medicines*: frequently sedatives, antibiotics, antipyretics, antitussives, contraceptives, psychotropic medication, antiseptics, antihistamines, gastrointestinal drugs, cardiac and blood pressure medications.[1]
  - *Don't forget that many pills look like candies!*
- *Cigarettes*: Chewing tobacco, especially in infants, is a quite common case of poisoning. It is considered quite dangerous and it needs to be addressed urgently. If a cigarette is chewed or swallowed, death can be caused within 24 hours.[2]
- *Petroleum products*: Very common cases of poisoning are petroleum, turpentine and gasoline poisonings. [4]
- *Household cleaning products*: The most common are chlorine, alcohol, detergents and dishwashing liquids.[1]
- *Insecticides and Pesticides*: Herbicides, weed killers and rodenticides.[7]
- *Various cosmetics* that contain alcohol such as colognes[1]
- *Gas*: Gas poisoning is very dangerous and it often is fatal.[8]

- *Food:* Some mushroom varieties (Amanita Phalloides, Amanita Muscaria or mushrooms that grow among grass, etc.). Also, some blackberry species that contain atropine might cause poisoning. Salmonellosis is a type of food poisoning that is caused by infected chickens or contaminated eggs.[6]
- *Alcohol:* Poisoning or intoxication that is caused by alcohol is quite dangerous.[2]
- *Other:*
  - Car fluids (antifreeze or coolant, gasoline and various cleaners).
  - Paint thinner (turpentine, thinners)
  - Plants such as Narcissus Excertus, Anthurium, Hydrangea macrophylla, Hydrangea Cyclamen persicum, oleander, poinsettia, Ricinus communis etc.[1]

There are some substances at home that are not considered to be poisonous. If small quantities of them are introduced into the body, these substances will not cause poisoning. These are [8, 15]:

- *Foam bath,* shampoo, soap, fabric softener. [1]
- *Cosmetics:* Various creams, Cosmetics such as lipsticks, make ups, Perfumes, Deodorants, Toothpaste. [2]
- *Other:* Ink, graphite (pencil), chalk, mercury that is taken from the thermometer. Mercury is poorly absorbed but pay attention to your child in case he/she has swallowed pieces of glass. [8]

## **TREATMENT OF POISONING**

It is essential parents and every individual who are faced with a child's poisoning not lose their composure. This will help them to evaluate the incident and the child's condition. [1]

- Check your child's mouth and remove as much quantity of the substance as possible, in case there is evidence that your child got a harmful substance. [16]
- Provided that your child is unconscious or he/she has taken a caustic substance (petroleum, detergents, cleaners, gasoline, bleach), emesis should not be induced because it can be aspirated into the lungs and this can choke the kid. Only if the child took a quantity of pills and the doctor is informed will emesis be induced with ipecac syrup. [1, 17]

- Unless there are indications that your child has taken naphthalene, camphor or he/she is unconscious, your child should drink milk or even water to dilute the poison in every possible poisoning case.[11]
- If the toxic substance has come into contact with the child's skin, remove the clothing and wash the skin with lots of water. [12]
- In case there is carbon monoxide or other toxic gases in the area, you should cover your mouth and nose with a damp cloth, take a deep breath and go into the place where the child is. Then, you must open the windows or the doors and pull the child out in the fresh air.[18]
- If a toxic substance has come into contact with the child's eyes, you should rinse his/her eyes with plenty of water for 10 minutes. Finally, the child must be transferred to an ophthalmologist for examination.[6]

All these pieces of information ought to be transferred to a special doctor or to a Poison Information Centre. Thus, health professionals would be able to make the correct diagnosis and offer the special treatment for this urgent condition. [20]

## **PREVENTION OF POISONING IN CHILDREN**

The basic rules to protect children from poisoning include measures simply and salutary for children. Keep all medicines, household cleaning products, paint solvents and cosmetics locked with security codes in places where children cannot reach. [12, 20]

Maintain the physical package of the product without removing its label. Do not use common packages, or for example, bottles of water or soft drinks, to store hazardous substances, such as petroleum, paint thinner, gasoline or alcohol. [13]

Never give medication at night without turning on the light. There is always a risk administering an incorrect dose. Do not give alcohol to children. Alcohol in children, even in small quantities, can cause hypoglycemia and put their lives in danger. Do not leave exposed ashtrays with cigarette butts lying around the house. You had better not smoke at all. [1, 8]

Ensure that battery-operated toys are well insured because the batteries are very toxic. If there are swallowed, they can cause corrosive injury to the upper gastrointestinal tract. [20]

Do not leave braziers, gas or oil heaters on indoors for many hours especially during sleep. Be sure to close completely the throttle grip before you go to bed. [18]

## CONCLUSION

Parents are solely responsible for their young children's safety and the environment that they live and move. However, even the most vigilant parent **can't** keep a child **100% safe** at all times.

A lot of specialized medical institutions have been established in many countries around the world. These structures have well-established facilities for poison control and facilities in order urgent diagnosis and treatment that include the most modern methods of removal of poison by elimination to be adopted by medical professionals.

Apart from this, the specialized structures provide all healthcare professionals who need additional information regarding specific aspects of the diagnosis and treatment of poisonings with telephone medical advice 24 hours a day.

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