Case Report

Funny Tale Ended As a Threat to Life – A Case Report

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Abstract

Rodenticides are pesticides that kill rodents. Ratol is a rodenticide available in paste from and the main ingredient is yellow phosphorous. Other possible composition in rodenticides are zinc phosphide and coumarin derivatives. Among all these yellow phosphorous has more lethal effects. They are not uncommon agents for poison to commit suicide in India. But in our case, though self-consumed, it was not with the intention to die. A 22 year old female consumed ratol poison just for fun. Later on she realized the seriousness of it but luckily survived with proper management.

Keywords: Poisoning, Rodenticides, Yellow phosphorous, accidental

Introduction:

Rodents include rats, mice, squirrels, woodchucks and Chipmunks which are known to damage crops, violating the codes of the house and in some cases causes ecological damage. Rodenticides, a group of pesticides are used to get rid of or kill these rodents to protect the grains and other substances. Rodenticides may have same type of effect when consumed by other mammals. Bait is the common form of preparation for rodenticides as it usually attracts the rodents. Baits used in natural and agricultural areas contains vegetables, fruits, ground meat or grains[1]. Ratol is a commonly used form of rodenticide in case of intoxication. The main ingredient of ratol is yellow phosphorous. Hepatotoxicity following acute ratol poisoning is frequently reported in literature.

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The manner of rodenticide poisoning is commonly either suicidal or accidental in nature because of easy accessibility. But consuming the poison for unintentional suffering is rarely reported in the literature. Hereby we present a case wherein a 22 year old female consumed ratol for fun and suffered with complications due to it. But luckily her symptoms were improved after effective care and timely treatment in the Hospital.

Case report:

A 22 year old female allegedly consumed a little quantity of ratol just for fun with a curiosity while she was at her home. Later she started experiencing abdominal pain, nausea and uneasiness. Then she revealed about the same to her mother and she was taken to a local hospital where treated symptomatically. Later she was referred to tertiary care teaching hospital for further management. Initially her liver functions were deranged grossly but later with appropriate treatment, they were back within normal limits. She was observed for quite a few days in the hospital and was discharged in view of improved general conditions.

Discussion:

Rodenticides have dangerous values since they can be a threat to life of children and pets. All rodenticides are toxic when eaten.[2,3,4] They are toxic even when inhaled or through dermal exposure. Warfarin has low toxicity with inhalation and dermal exposure.[5] Strychnine, cholecalciferol and zinc phosphide were of relatively less toxic with dermal exposure.[2,4,6] Bromethalin has moderate toxicity for dermal exposure[3]. There are many types of mechanisms through which rodenticides act. They are exhibiting an anti-coagulant mechanism, central nervous system damage, cellular damage etc. The first anticoagulant rodenticide registered for use is warfarin.[7]

Bromethalin acts by inhibiting energy production in the central nervous system thus resulting in swelling of nerve cells which eventually lead to the raise in pressure in the brain resulting in paralysis and death.[8] Cholecalciferol (Vitamin D_3), will enhance the calcium absorption from the gut. Hence it can cause effects due to hypercalcemia. Although pets got sicker after ingestion of the vitamin D_3, toxicity to humans are rare phenomena.[9] Zinc phosphide acts by release of phosphine gas in the presence of water and acid thus inhibiting the cellular energy production resulting in death.[10] Strychnine affects the spinal cord and cause rapid firing of neurons leading to muscle spasms which might result in respiratory muscle paralysis and death.[11] Yellow phosphorous cause acute hepatic failure thus it is considered as the most toxic form of rodenticide and there is no specific antidote available for it.[12, 13] The liver biopsy in such cases will reveal collapsed reticulin framework with fibrosis between the hepatocytes and also bubbly and vacuolated cytoplasm which suggests acute fulminant hepatitis.[14]

Accidental poisoning is more common with ratol poisoning because of its paste form which attracts children.[15] But intentional consumption of ratol by an adult other than suicidal purposes is rarely reported in the literature to the best of our knowledge. In our case due to intentional consumption of the ratol for fun, the patient developed complications for which she was treated symptomatically along with supportive management. She got recovered in the due course and survived. Such unintentional sufferings are the results of incomplete knowledge or improper awareness about the pesticides.

Conclusion:

The accidental poisoning in children as well as adults can be prevented by providing the necessary information regarding the preventive measures so as to avoid contacts and side effects of the compounds. The poison is a poison and the adults should never try to play with it.

Conflict of interest: NIL

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