Poison Control Centre Newsletter
Volume 2 No. 1 (January-March) 2003

Editorial

This issue brings you the data of Central Registry of Poisoning Cases during 2002. The cooperation extended by the emergency staff of all hospitals for filling the proformas and the focal points for sending them to this Directorate is duly acknowledged. Your suggestions to improve the system are welcome.

Contents

➢ Scientific Articles / Reviews
  • Central Registry of Poisoning Cases: Data of 2002

➢ Current Concerns
  • Accidental Amitraz poisoning in children on the increase.
  • Blood lead concentration and delayed puberty in girls.

➢ Regulatory Issues
  • Poisoning by an illegally imported Chinese rodenticide.

➢ Poison Control Centre News
  • Participation in Muscat Health Month Programme

➢ Regular Features
  • Brainteasers: Answers of the previous issue and new food for thought.

➢ Conferences Training Courses
Scientific Articles / Reviews

Central Registry of Poisoning Cases: Data of 2002

Acute poisoning is an important clinical emergency that contributes significantly to the indoor and outdoor morbidity. A valid epidemiological data, depicting the total incidence, sex distribution, susceptible age groups and types of poisoning prevalent in various regions, is essential to evolve strategies for strengthening poisoning prevention and management. To achieve this goal, Central Registry System was initiated by Poison Control Centre after the approval of the proposed proforma for the purpose. The proforma is based on the WHO/INTOX data management system, for promoting harmonized data recording amongst different countries. Before starting the Central Registry System in the country, a symposium “Overview of Poison Control Centre and Central Registry of Poisoning” was held in February 2002. Twenty-five health professionals nominated by the Regional Health Directorates and referral hospitals participated as the Focal points to facilitate the Central Registry System. The details in proforma were discussed, and strategies for collection of forms were delineated. The focal points took the responsibility for collecting the duly filled proforma from all hospitals and health centres in the region and dispatching them to the Poison Control Centre.

Results

The total number of poisoning cases registered from all regions and two referral hospitals were 5995. Two thirds of the cases involved adults while one third children with males outnumbering females (Table 1). Analysis of incidence in various age groups revealed maximum number in the age group of above 40 years (19%) followed by adolescents (13-19 years) and the children in the age range of 1-4 years. Interestingly further analysis of data showed male cases more than females up til 19 years of age, while beyond this age, the sex prevalence reversed with females affected more than males (Fig. 2).

Scorpion ting cases were maximum (2856) followed by bee and wasp stings. Poisoning due to accidental or intentional exposure to pharmaceutical was found to be the third most common cause.

A large number of cases belonged to the category of unknown insect bites and unknown poisonings (Fig. 3). There were regional variations in the incidence and types of exposures (Table II, Fig. 4). In the two-referral hospitals, the number of poisoning cases due to pharmaceuticals were maximum and paracetamol was the most common drug involved. Poisoning cases due to household products were seen more in Royal Hospital than SQUH (Fig. 5).

Thus, according to the Central Registry of Poisonings data, the incidence of acute toxic exposures is 0.25% considering the total population of the country to be 2.4 million. Insect bites and stings and poisonings due to pharmaceuticals and household products are the most common. However, there was no mortality recorded.

Awareness and educational programmes targeted for parents and children are necessary to prevent accidental poisonings.
Introduction of child safety packs and containers will further reduce the accidental exposures in children. Availability and rational use of activated charcoal will reduce morbidity due to pharmaceutical poisoning. In view of significant number of unknown poisoning, it would be relevant to know the reason for such reporting, so that proper measures could be undertaken. Further, the private sector remains to be tapped for inclusion in the central registry, the efforts in this direction are ongoing.

**Current Concerns**

- **Accidental Amitraz Poisoning in children on the increase**

Accidental Amitraz poisoning in children is an emerging problem worldwide. According to a report published in the Archives of Diseases in Childhood, 88:130-134, 2003 from Turkey, this insecticide and acaricide acts centrally as a presynaptic alpha 2 agonist, causing signs and symptoms similar to those of clonidine overdose. In a case series of five boys and four girls aged 10 months to 8 years, the estimated ingested dose ranged from 89.2 to 163 mg/kg, and the estimated time from ingestion to presentation at the hospital was 30 to 120 minutes. Early signs and symptoms were, decreased level of consciousness, vomiting, disorientation, miosis, or mydriasis, hypotension, bradycardia, tachypnea, hypothermia, and generalized seizures. Some patients had hyperglycemia, glycosuria, and minimal increase in transaminase levels. None required mechanical ventilation, and all had a good outcome with spontaneous resolution of central nervous system depression within 4 to 28 hours. Duration of hospitalization was two to three days. Amitraz poisoning may also occur through exposure via dermal route or by inhalation. As there is no specific antidote for Amitraz poisoning, the management is supportive and symptomatic. Alpha-2 adrenergic receptor antagonists are ineffective. Particular attention must be given to monitoring and evaluation of the respiratory, cardiac, and central nervous system, as increased intake may lead to coma and respiratory failure.

This insecticide is categorized as slightly hazardous (Class III). It is available in Oman. The chemical is used for agricultural and garden pest management. Primary prevention of poisoning by child safety packaging, proper labeling and safe household/farm storage is essential.

*Abstracted from Medscape Medical News, February 2003*

- **Blood Lead Concentration and Delayed Puberty in Girls**

To study the relation between blood lead concentration and pubertal development among girls (defined as females 8 to 18 years of age), who were enrolled in a cross-sectional study in which race was self-reported or proxy-reported: was conducted in 600 non-Hispanic white, 805 non-Hispanic Afro-American and 781 Mexican-American girls. Puberty was measured on the basis of the age at menarche and Tanner stage for pubic-hair and breast development. The results indicated that geometric mean of lead concentrations were less than 3µg per deciliter (0.0144 µmol per litre)in all groups. The lead concentrations of 3µg per decilitre were associated with decreased height (P<0.001), after adjustment for age, race, and other factors, and delays in breast and pubic-hair development in African-American and Mexican-American girls. The delays were most marked among African-American girls. In this group, there was delay in reaching Tanner...
stages with lead concentration of 3µg per deciliter as compared with 1µg per deciliter. The associated delay in age at menarche was 3.6 months. In white girls, there were insignificant delays in all pubertal measures in association with a lead concentration of 3µg per deciliter. These data suggests that environmental exposure to lead may delay growth and pubertal development in girls. However, these observations need to be confirmed in prospective studies.


Regulatory Issues

- Poisoning by an illegally imported Chinese Rodenticide

Illegally imported foreign products can result in domestic exposures to unusual toxic chemicals, and health care providers might not be able to provide appropriate therapy because the chemical ingredients might not be listed or recognized even after translation of the product label. This report describes the first known case in the United States of exposure to Chinese rodenticide containing the toxin tetramethylenedisulfotetramine (TETS), a convulsant poison.

A previously healthy female infant aged 15 months was found by his parents to be playing with a white rodenticide powder that they had brought from China and applied in the corner o their kitchen. After 15 minutes, the child had generalized seizures and was taken to an emergency department. Her initial blood glucose level was 108 mg/dl (normal range: 80-120 mg/dl). Despite aggressive therapy with lorazepam, Phenobarbital, and Pyridoxine, she had intermittent generalized seizure activity every 4 hours and required intubation. After 3 days, the infant was extubated successfully but appeared to have multiple neurological deficits, including absence seizures and possibly cortical blindness. Continuous electroencephalogram monitoring, performed during the initial hospitalization, revealed multiple epileptogenic foci. On follow-up, the infant was severely developmentally delayed and was on valproic acid therapy for seizure control.

Translation of the rodenticide package labeling from Chinese to English did not clarify its contents. A research of the China National Poison Control Centre’s (NPCC) website for rodenticides suggested that the ingredients could be sodium monofluoroacetate, fluoroacetamide, tetramethylenedinitrosotetramine, or strychnine. However, an initial laboratory analysis was negative for these chemicals. The New York City Poison Control Centre conducted on additional laboratory test for TETS, which was found to be positive. It was then concluded that the poisoning was due to TETS.

The report highlights the need to prevent such poisonings through increased public education, enforcement of laws banning import of illegal toxic chemicals, and proper labeling of all pesticides.

Abstracted from Morbidity and Mortality Weekly Report, April 2003
Poison Control Centre News

Poison Control Centre conduction poisoning prevention awareness programme in 13 schools (Basic, Primary, and Secondary) in Muscat Region during February 2003.

Regular Features

- **Brain Teasers:** Answers of the previous issue.
  - Vitamin K1 is effective antidote for Super warfarin.
  - Folinic acid is used for methotrexate overdose.
  - QRS and QT interval prolongation is common with tricyclic antidepressants.
  - Methylene blue is ineffective in G6PD deficient methemoglobinemia patients.

- **New food for thought**
  - Severe poisoning due to antidepressant drugs can benefit from hemodialysis. *Yes / No*
  - Most available antivenins are derived from: - *Human serum / Goat serum / Horse serum*
  - Which of the cosmetic ingestion can cause toxicity in a young child? *Lipstick / Eyeliner / Perfume*
  - Which of the following may be a manifestation of lead encephalopathy? *Metabolic acidosis / Cerebral oedema / Hepatic failure*
  - Which of the following is a chemical asphyxiant? *Cyanide / Carbon monoxide / Nitrogen*

Forthcoming Conferences/Training courses/Symposia during 2003 in Muscat

- Seminar on the World Health Day (7 April 2003)
- Expert Group Meeting May/June 2003
- National Training Course on lead poisoning with special emphasis on Women and Children’s health, 13-15 September 2003.