

# A Toxicological Disaster

Dear Colleagues,

I am sure you read the recent news reports (March 2005) about the many Filipino children who suffered serious ill effects after consuming a common Asian delicacy made from the root of the cassava or tapioca plant. A total of 28 children died, while another 77 came down with vomiting and diarrhoea requiring hospitalisation in Bohol, Philippines.

It is common knowledge that this root contains cyanide. It requires careful preparation and must not be eaten raw. Those who fell ill and were brought to hospital were treated for presumed cyanide poisoning. Strangely, however, this did not work, and most toxicologists who followed the news would have smelled a rat.

The media reported that most victims presented with diarrhoea and vomiting. From the toxicological perspective, this is unusual. Cyanide poisoning victims are more likely to present with breathlessness and altered mental states (arising from hypoxia secondary to the toxic effects of cyanide). In this situation, although cyanide seemed to be the most likely suspect, other causes should have been considered, for example, food poisoning from secondary bacterial contamination of the food sources, or residual pesticide contamination of the roots. Indeed, if the degree of suspicion had been high and the primary physicians alerted to look for signs of the cholinergic toxidrome that nerve agents (pesticides) cause, the correct diagnosis could have been made early. With prompt diagnosis and early administration of antidotes (pralidoxime, atropine), there may have been a significant difference in outcomes for some of these children. The final laboratory analysis of the food specimens showed elevated levels of carbamates, which are pesticides used by agricultural industries to reduce crop wastage. Carbamates inhibit the acetylcholinesterase enzyme function, which is essential for normal transmission of nerve impulses in the central and peripheral nervous systems.

The presence of toxicological expertise capable of providing such vital information in a timely manner would have been critical in mitigating this disaster and ensuring proper management of the poisoned victims right from the start. Therein lies the importance of a Drug and Poison Information Centre with a wide range of resources and experienced staff, readily available just a phone call away.

I am glad to announce that this long-awaited service has now become a reality in Singapore with the launch of the centralised Drug and Poison Information Centre (DPIC).

## WHAT IS THE DPIC?

The Drug and Poison Information Centre (DPIC) was established in April 2004 and is co-located with the Department of Emergency Medicine, SGH. The Centre also incorporates the SGH Drug Information Service. **Our 24-hour hotline is 6423 9119.**

It is a non-profit centre funded by the Ministry of Health, and is aimed at providing accessible high-quality drug and poison emergency advice in a timely manner, as well as to serve as the primary resource for poison education, prevention and treatment advisory in Singapore. The DPIC is staffed by pharmacists and toxicologists with a wide range of resources and who are well-equipped to deal with various enquiries.

The DPIC will provide information to healthcare professionals (for example, doctors, dentists, pharmacists and nurses), industries (for example, chemical and pharmaceutical) and members of the public. This service is provided 24 hours a day.

## DPIC SERVICES

These include the provision of a telephone Drug and Poison Information consultative service, recommendations for optimal patient management, assistance with the diagnosis and treatment of unknown or suspected poisonings, and organisation of poison prevention activities to educate the public on poisons prevention and first aid for poisonings.

Drug information includes:

- Patient-specific dosing information
- Patient-specific choice of drug therapy
- Monitoring parameters for drug therapy
- Dose adjustments in paediatric and geriatric cases
- Dose adjustments in patients with impaired renal or hepatic function
- Drug safety in pregnancy and breast-feeding
- Side effects and adverse reactions of drugs, traditional medicine and health supplements
- Drug interactions with other drugs, food and traditional medicine
- Drug identification (including foreign medicines)
- Parenteral drug compatibilities and admixtures
- Storage and stability issues

Poison information includes:

- First aid advice on management of toxic exposures by known or unknown agents
- Identifying signs and symptoms of toxic exposures to specific poisons:
  - 1) Overdoses with medications
  - 2) Exposure to household chemicals, cosmetics
  - 3) Herbals, traditional medicines and dietary supplements
  - 4) Industrial chemicals exposure
  - 5) Bites and stings from venomous creatures
  - 6) Toxic plants
- Advice on detailed medical management of poisonings
- Poison prevention information (brochures/lectures)

*For more information on the DPIC, or for your enquiries, please contact us at:*

**Islandwide 24-hour Hotline: 6423 9119**

**Fax: 6324 2991**

**Email: [gaedpic@sgh.com.sg](mailto:gaedpic@sgh.com.sg)**

**Website: <http://dpic.sgh.com.sg>**

You can also read more about the DPIC at **[http://www.sgh.com.sg/Newsroom/Newsletter/News\\_DPIC.htm](http://www.sgh.com.sg/Newsroom/Newsletter/News_DPIC.htm)**

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