

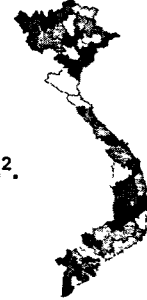
Acute poisoning in Vietnam epidemiologic and therapeutic aspects

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Introduction

- **Vietnam in brief:** a developing country
- **Toxicologic epidemiology:** General condition
- **Poison control centre**
 - ◆ Organization
 - ◆ Intoxication report
 - ◆ Recent capacities and duties
 - ◆ Solutions and plans

Vietnam in brief



- A developing country approximately 330,900Km².
- Population over 80 million, with 80% farmers, 17% elders, 11% youths, 45% adolescent, and 27% children (Vietnam news)
- Vietnam is an agricultural country, export: rice, coffee
- Explosion of economic development from 1991;
- Tourism: the destination of new millennium
- Health care system based on 61 provincial hospitals, 500 district medical stations, but only PCC placed in Ha Noi (Bach Mai university hospital), other poisoning patients admitted to EM & ICU at local hospitals.

Toxicologic epidemiology

general condition

- Together with social economic development are increasing risks of toxical industrial chemicals, agricultural chemicals, imported drugs, venomous animals, alcohol, drugs abuse, food poisonings.
- Over 25 years from the last war, warfare toxic agents remaining: dioxin, CS ...

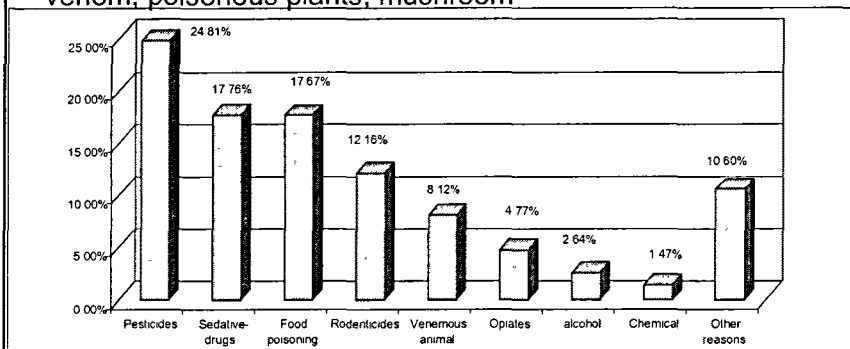
	1996	1997	1998	1999	2000
Poisoning patients	9524	10372	8110	8339	8916
Poison-related deaths	273	335	305	252	244
% Mortality	2.86%	3.23%	3.76%	3.02%	2.74%

Survey in 48 local hospitals

- First range: pesticides (OPs, rodenticide-trifluoroacetamide, Zn phosphide, thallium; new insecticides-neristoxin..., herbicide)
- Second: sedatives and drugs abuse or overdose, opiates and alcohol
- Third: venomous animals and plants: snakebite, puffer fish, bee stings, toad venom, poisonous plants, mushroom

Toxicologic epidemiology

general condition



	reported cases (% of total)	Numeral mortality (Mortality, expressed in % of reported)	Toxicologic Epidemiology Survey in 48 local hospitals
1. Pesticides	24.81%	6.61%	
2. Sedative-drugs	17.76%	0.86%	
3. Food poisonings	17.67%	0.24%	
4. Rodenticides	12.16%	3.5%	
5. Venomous animal	8.12%	3.42%	
6. Opiates	4.77%	5.12%	
7. Alcohol	2.64%	0.28%	
8. Chemicals	1.47%	6.17%	
9. Other causes	10.6%	7.48%	
Total	100%	3.26%	

Toxicology epidemiology

Pesticide poisoning

- Annual importing ~ 30 000 tons of raw materials and pesticides ~120 millions USD
- 743 types of permitted commercial insecticides, formulated of 171 different activated elements
- organophosphate in the North and Paraquat in the South.
- Imported rodenticides are used for suicide and suicide attempt, and dangerous misuse in children (7% of acute poisoning)

Children's vulnerability

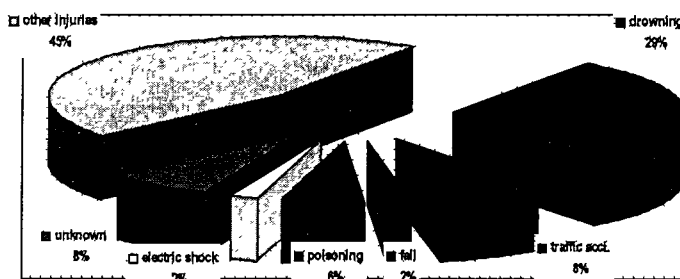


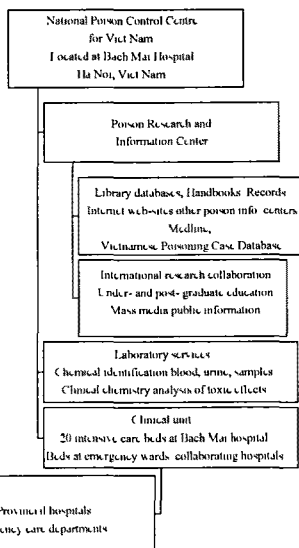
Chart of dead children, survey of US Embassy -2000

- More children died in drownings than from plague, cholera, typhoid and malaria combined
- More children die of poisonings in the home than Japanese B encephalitis (The US Ambassador-Pete Peterson-2000)
- Over 7% admitted poisoned patients are children; 6,7% acute poisonings joined PCC 6 month 2001.
- Most are misuse poisoning
- Multi-incident poisonings in school cause of remained warfare in the south and BuonMathuot province (CS)





Poison Control Center

- **Poison Control Center (PCC) established from Dept. of Emergency Medicine and Intensive Care Medicine in 1998 was the first Clinical Toxicology Center of Vietnam.**
- **PCC was organized with 3 units: Clinical Toxicology Unit, Toxicology Lab and Information Center.**
- **PCC personnel: Head: Prof. Nguyen Thi Du, 7 doctors, 22 nurses, 2 pharmacists, 1 bachelor of Chemistry and 1 engineer.**

Poison control centre



main activities

- Treatment for >1000 poisoning patients per year 
- Training for under and postgraduate students 
- Laboratory support 
- Establish toxicology database, case report system, treatment protocols.
- Consult for doctors in other hospital 
- Some TV programs for antipoinson knowledges.



Poison Control Centre
 treated patients in the last 6 years

Year	1998	1999	2000	2001	2002	2003
Poisoning patients	118	526	740	1100	1817	1669
Deaths of poisoning	10	6	10	15	18	14
Mortality (%)	8.5	1.14	1.35	1.36	0.99	0.84

Poison Control Centre
 treated patients in the last 6 years

Homicide	Misuse	Sucide	accidental	Total
5	9	395	1260	1669
0.3%	0.5%	23.7%	75.5%	

Poison control centre epidemic study in the year 2003

Causes of poisonings

Causes	Total
Food poisoning	567
Sedative/hypnotics	305
Evenomation	227
Substance of abuse	205
Pesticide	149
Houshold products	47
Plant	31
Heavy metals	9
Accidental	8

Poison control centre toxicological lab work in 2003

- Tox. tests for pts treated in PCC: 4198
 - Tox. tests for pts in other hospitals: 199
 - Sending samples to other Labs: 305
 - Co-operation in toxicological analysis with experts in Pharmacology School and botanists
- Results of toxicologic tests

Medications	Pesticides	Drugs of abuse	Alkaloide	Household products	Total
2456	625	877	234	6	4198
58.5%	14.9%	20.9%	5.6%	0.1%	

Poison control centre proposal plan and goals

◆ Problems and situation:

- Many poisonings occur with pharmaceuticals resulting from unintentional overdoses, drugs abuse, and suicide
- Few doctors know how to recognize and how to treat drug overdose, adverse reactions and poisoning cases
- Many hazardous chemicals are used in agriculture and other workplaces, causing acute as well as chronic poisonings.

◆ Vision & objectives

- Information and guidance should be available for doctors to support for clinical treatment and management of poisonings
- Statistics and intoxication surveillance should be improved to recognize poisons and hazardous chemicals in Viet Nam
- Prevention activities should be strengthened by interventions against uncontrolled sale, unprotected use of dangerous products, by improved knowledge and risk awareness

Poison control centre proposal plan and goals

◆ Options

- Establish hot line for counselling not only health care providers but people in community
- Collaboration with international PCCs, for information exchange, staff training and for back-up support.

◆ Action plans 2004-2005 and 2005-2010:

- Advisor for policy makers to strengthen prevention activities
- Set up national network of the poison control centres focus on 3 main area centres: North (HaNoi, Thai Nguyen), south (HoChiMinh city, CanTho), and center (Hue, Danang).
- Medical training: training courses in clinical toxicology, laboratory analysis, establish treatment protocols, improve the antipoison knowledge for community, reduce the mortality
- Epidemiology mapping

