Characteristics of elderly with acute poisoning at Vietnam Poison Control Center

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Summary

Objective: The aim of this study was to identify the prevalence and causes of acute poisonings in older people admitted to Vietnam Poison Control Center (PCC). *Subject and method:* A retrospective descriptive study was conducted at the PCC for 8 months in 2019 with 275 acute poisoned patients aged 60 and older. The questionnaire collected data was based on the International Program for Chemical safety (IPCS) format. Entered data on Redcap and using SPSS version 22.0 for analysis. *Result:* The prevalence of acute poisoning was higher in female elderly. The most common cause of poisoning was poisonous animals (44.7%). The number of elderly patients suffered from acute poisoning increased in April, July and August. Ingestion and bite were two most common routes of exposure (53.8% and 41.1%). *Conclusion:* Acute poisoning was common in the elderly and increased in 4th, 7th and 8th month of the year.

Keywords: Poisoning, prevalence, older people, Vietnam.

1. Background

The number of acute poisonings occurring in the elderly is increasing and becoming one of health problems of elderly. In 2003, 80.72 people were poisoned and 1.11 died in every 80,000 people nationwide. Factually, 66,190 people poisoning and 910 deaths in Vietnam in this year [1]. At Vietnam Poison Control Center (PCC), the number of poisoned patients in 1998 was 118, but by 2003 this number had increased to 1669 [1]. The elderly patients have a high risk for morbidity and mortality because of existing diseases and age-related physiological changes in renal and hepatic functions [2, 3]. Thus, acute poisonings in elderly represent a particular group with many preventable reasons, especially unintentional/accidental situations [4]. On further analysis, it was found that both intentional and unintentional exposures were almost equally prevalent, with polypharmacy being a significant risk factor for poisoning in the elderly [5]. In order to reduce the burden of acute poisoning in the elderly, epidemiological information of acute poisoning takes important role. In Vietnam, there are many studies on overall poisoning, however, the studies focused on acute poisoning in older people are scarce. Therefore, the aim of this study was to identify the features of acute poisonings in older people admitted to Vietnam Poison Control Center.

2. Subject and method

2.1. Subject

All patients aged 60 and older diagnosed acute poisoning at the PCC from January 2019 to August 2019 were involved in the study. The PCC at Bach Mai Hospital is the only PCC and covers for the North and northern part of the Center of Vietnam.

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Study and design

A retrospectively descriptive study was conducted on 275 elderly with acute poisoning. We excluded patients not completed research questionnaire or not finished the course of treatment. A questionnaire based on International Programme for Chemical Safety (IPCS) - (Case/incident/request format).

Variables and data processing

Enter the file storage room to get a list of patients aged 60 years and older for treatment at the Poison Control Center from January 1, 2019 to August 31, 2019. Get medical records from the file storage room according to the list. Select the eligible medical records and no type criteria to be included in the study. Selected medical records are carefully exploited and filled in the research records. Information about exploitation includes:

General features (name, gender, age; occupation, address: Specify the address and classify it into 3 areas: Rural, urban and suburban);

The agent causing poisoning classify them into the following 9 groups: Suppositories, sedatives; other drugs; addictive substances; plant protection chemicals; household chemicals; traditional medicine; animals: Snake bites, bee stings, other animals (centipedes, insects...); Food: bacterial infection, chemical contamination, food allergies, plants (mushrooms, cassava, bamboo shoots, etc.), puffer fish, toad, fish bile, pig bile,…; Other agents.

Acute poisoning circumstances: Clearly record the medical history from which to identify the circumstances of acute poisoning and divide into the following groups: Intentional circumstances, unintentional circumstances, unknown; Places where acute poisoning occurred; Poisoned pathways: from the history of identification of intoxicated sugars and divided into the following groups: gastrointestinal tract; skin and mucous membranes; Respiratory; bite, sting; injecting.

Process of data analysis

After collecting data, entered data on Redcap software and then analysis was done by using SPSS software version 22.0. Chi-square test was used to find out the differences between rates and t test was used to compare means. Independent-samples t-test to compare means. Statistical significance was considered to be statistically significant if the value less than 0.05.

3. Result

A total number of 275 acute poisoned patients admitted to Vietnam Poison Control Center in 8 months from January 1st to August 31st, 2019 were included in the study.
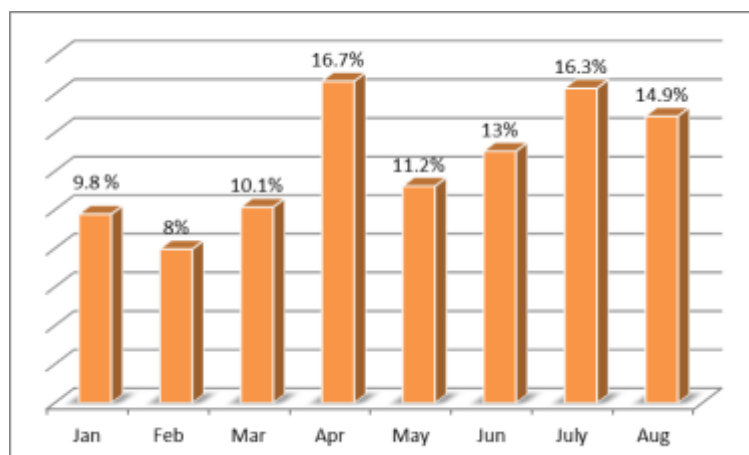

Figure 1. Distribution of the number of patients by month

The number of elderly patients with acute poisoning increased in April, July and August.
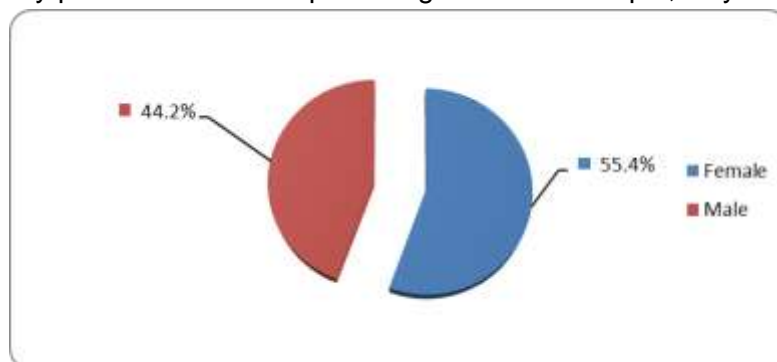

Figure 2. Gender distribution of the study patients

Among study subjects, the percentage of female patients with acute poisoning (55.4%) was higher than male patients (44.2%). The male/ female ratio was 1.25.

Table 1. Distribution by occupation

Occupation	n = 275	Percent (%)
None	30	10.9
Housewife/Husband	10	3.6
Agriculture worker	129	46.9
Industrial worker	8	2.9
Commercial	7	2.5
Retired officers	52	18.9
Armed forces	1	0.4
Unknown	38	13.8
Total	*275*	*100.0*

The most common occupation was farmer (46.7%), followed by retired officers (18.8%).

Table 2. Toxic agents (n = 275)

Agents	n	Percent (%)
Pharmaceutical (human)	50	18.2
Industry/commercial	4	1.4
Household/leisure	4	1.4
Pharmaceutical (veterinary)	3	1.1
Pesticide	27	9.8
Agriculture (no pesticides)	12	4.4
Food/beverage	40	14.5
Animal	123	44.7
Other use	12	4.4

The most common causes of acute poisoning were poisonous animal bites (123 cases, 44.7%), followed by medications (50 cases, 18.2%), food / beverage (40 cases, 14.5%), pesticide (27 cases, 9.8%), agriculture (no pesticides) (12 cases, 4.4%).

Table 3. Route of exposure

	n = 275	Percent (%)
Ingestion	148	53.8
Inhalation	4	1.5
Cutaneous	2	0.7
Bite	113	41.1
Sting	6	2.2
Unknown	2	0.7

Ingestion acute poisoning accounted for the highest proportion of poisoning (148 cases, 53.8%), followed by bite (113 cases, 41.1%).

4. Discussion

Our study showed that, the number of elderly patients with acute poisoning increased in April, July and August. The rate of female enlightenment was higher than that of men (55.6% compared to 44.4).

For the whole 8 months, the rate of female enlightenment is higher than that of men (55.4% compared to 44.2%). The results are consistent with the research of Barbara IC (2004) revealed that 34% of elderly patients poisoned were men, 66% were women [8]. For each age group, the percentages of acute poisoning in women were always higher than men [5].

The results of this study differed significantly from those of other acute poisoning patients at the Poison Control Center. According to Ha Tran Hung et al, the ratio of men to women was 1:1 [2].

Poisonous animals are the number one acute poisoning agents. According to research by Dang Thi Xuan and Nguyen Thi Du, the rate of acute poisoning by snake was 13.89%, Association of Poison Control Centers 2000 recorded 3.8% [3].

In this study, I found that poisonous animals include two types, snake and bee. The agent was the venom that occurred in a large proportion (44.7%), higher than other studies [9, 10].

The climate of our country is hot, humid, rainy, and favorable. There are many plants are favorable for the growth and development of snakes and bees. They grow mainly in rural areas. In our study, 96/176 cases of bites were found in rural and suburban areas, with 6/18 cases.

5. Conclusion

The number of older patients with acute poisoning increased in the 4th, 7th and 8th month of the year. Poisoning was more common among female than male elderly.

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