

CLINICAL CHARACTERISTICS AND TREATMENT OF ACUTE POISONING IN OLDER PATIENTS AT VIETNAM POISON CONTROL CENTER

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Acute poisoning constitutes a major cause of emergencies in Vietnam, especially in older people with many risk factors. The purpose of this study was to assess the clinical characteristics and the treatment of acute poisoning in older people admitted to Vietnam Poison Control Center (PCC). A retrospective descriptive study was conducted at the PCC from January to August 2019 with 275 acute poisoned patients aged 60 and over. The questionnaire collected data was based on IPCS format. Redcap and SPSS software were used for analysis. The majority of patients was admitted in moderate condition (47.5%). The intentional poisoned patients were more severe than unintentional patients. The most common treatment was support therapy, gastric lavage, single dosage of activated charcoal, modified diuresis, and use of antivenom. The enhance elimination methods such as hemodialysis, hemoperfusion were less used in elderly with acute poisoning. The majority of patients recovered completely after treatment (52.7%). The study revealed clinical features and the management of acute poisoning in older people at the PCC.

Keywords: Poisoning, clinical characteristics, treatment, elderly, Vietnam

I. INTRODUCTION

Acute poisoning constitutes a major cause of emergency department visits globally. With an increase in new household chemical supplies, cleaning agents and disinfectants, pesticides and fertilizers, drugs and pharmaceuticals, cases of poisonings are on the increase. Although elderly patients account for a small fraction of total poison exposures, however, when exposed, they have a high risk for mortality because of existing co-morbidities and age-related physiological changes in renal and hepatic functions.¹ Collecting detailed

epidemiological information on acute poisoning exposures in the country and formulating strategies to reduce acute poisoning exposures is the need of the hour.

The most vulnerable subjects in the field of acute poisoning are children and older persons.² Therefore, when the number of the elderly people increases, the number of acute poisoning cases occurring in the elderly is also increasing and becoming one of the issues of concern for their health. In 2000, in the United States, the number of people aged 60 and older accounted for 16.3% of the total population but the number of calls to the Poison Control Centers from these subjects represented a significant share.³ According to studies in the US, the proportion of acute poisoning in the elderly accounted for about 2.5% of total recorded acute poisonings

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in 1993, increased to 3.4% in 1997.⁴ Another study in Germany showed that the mortality of acute poisoning in people aged 65 and older was nine times higher than the overall mortality rates of acute poisoning.⁵ In Vietnam, there is still a lack of studies on acute poisoning in older patients. This study aimed to assess the clinical characteristics and the treatment of acute poisoning in the elderly.

II. SUBJECTS AND METHODS

1. Subjects

The study included all consecutive patients with acute poisoning aged 60 and older at the Vietnam Poison Control Center from January 2019 to August 2019. The exclusion criteria consisted of patients lacked information on clinical manifestations and the treatment or patients had not completed the course of treatment.

2. Study and design

A descriptive study was conducted on 275 patients aged 60 and over using a questionnaire based on the International Program for Chemical safety (IPCS) - (Case/incident/request format).

Variables and data processing

Selected medical records were carefully reviewed and filled in the research questionnaire. The information of exploitation includes:

General demographic characteristics (name, gender, age groups: 60 - 69 years old; 70 - 79 years old; 80 years or older, occupation, address: specify the address and classify it into 3 areas: rural, urban and suburban);

Clinical characteristics: past medical history (cardiovascular, respiratory, Gastrointestinal, endocrine-metabolic, neurological, musculoskeletal, and urological and genital diseases, group of mental illness, and other diseases); The time from exposure to onset symptoms; the severity of poisoning according to PSS; Assess clinical features of acute poisoning systematically (Respiratory, GI, Hepatobiliary, Urology, Cardiovascular, Neurology - muscle, Eyes, Skin).

Treatment: The time from exposure to receive the first treatment; First Aid; The time from exposure to admit the Poison Control Center; Treatment at the PCC (Prevent GI absorption; Enhance elimination; Specific antidote and supported therapy).

Process of data analysis

Data were collected and entered in Redcap software and analyzed by SPSS software version 22.0. Descriptive statistics were reported as means and standard deviations, minimum, maximum. Chi-square test was used to find out the differences between rates and t test was used to compare means. Independent –samples T-test used to compare means. Statistical significance was considered to be statistically significant if the value less than 0.05.

3. Ethical issues

All data collected was used for research. The results of the study were proposed for improving community health, not intended for other purposes and all ethical issues in biological research were followed.

III. RESULTS

A total number of 275 acute poisoned patients admitted to Vietnam Poison Control Center during 8 months in 2019 were included in the study.

The percentage of female patients with acute poisoning (55.6%) were higher than male patients

(44.4%) (Female: Male = 1.25:1). Patients were distributed in all age groups. Age group from 60-69 was the most common, accounted for 68.4%. Age group 70-79 accounted for 22.9%. There were 8.7% of acute poisonings in 80-89 years old. The most common occupation was farmer (46.7%), followed by retired officers (18.8%)

Among the patients, the past medical history of heart diseases was the most common, then were digestive and endocrine - metabolic diseases. On admission, the majority of patients had moderate symptoms (47.5%). However, 30.4% presented with severe condition and 20.5% of patients had only minor symptoms. The group of intentional acute poisoning patients were more serious than unintentional/accidental group of patients

Table 1. Past medical history (n = 275)

Past medical history	n	%
Cardiovascular diseases	62	22.5
Gastrointestinal	19	6.9
Endocrine-Metabolism	17	6.2
Psychiatric	13	4.7
Musculoskeletal	8	2.9
Neurology	3	1.1
Respiratory	13	4.7
Urinary	6	2.2
Other	11	4.0
Unknown	29	10.5
None	94	34.4
Total	181	65.6

Gastrointestinal symptoms were most common, followed by dermatological symptoms

Table 2. Clinical features of acute poisoning in elderly (n = 275)

Symptoms	n = 275	(%)
General disorders	196	71.3
Cardiovascular	37	13.5
Respiratory	46	16.7
Gastrointestinal	92	33.5
Endocrine and reproductive	8	2.9
Dermatology	115	41.8
Toxidromes	0	0
Others	0	0

Fluids & electrolyte intravenously replacement were used the most, followed by other treatment (symptom/support), antivenom, gastric lavage, modified diuresis and single dosage of activated

charcoal. The enhance elimination methods such as hemodialysis, hemoperfusion, plasma exchange were less used in elderly with acute poisoning.

Table 3. The treatment measures (n = 275)

Decontamination	n	%
Gastric lavage	46	16.7
Induced emesis	1	0.4
Activated charcoal single dosage	35	12.7
Symptomatic/support		
Fluids & electrolyte p.o	8	2.9
Fluids & electrolyte i.v	259	94.2
Oxygen, normobaric	25	9.1
Oxygen, hyperbaric	3	1.1
Transfusion	2	0.7
Cooling	1	0.4
Parenteral/Ent nutrition	19	6.9
Intubation	29	10.5
Mechanical ventilation	11	4.0
CPR	3	1.1
Defibrillation	2	0.7
Other treatment (Symptom/support)	118	42.9
Decontamination ex		
Skin decontamination	28	10.2
Folk remedies	7	2.6
Enhance Elimination		
A.charcoal, multiple dose	3	1.1
Forced diuresis	43	15.6
Alkalinization	3	1.1
Hemodialysis	1	0.4
Exchange transfusion	0	-
Hemoperfusion	11	4.0
Plasma exchange	2	0.7
CVVH	7	2.6
Hyperventilation	1	0.4
Antidote	59	21.5
Antivenom	58	21.1
Other pham.	23	8.4
Consultation	3	1.1
Other treatment	5	1.8
Unknown	1	0.4

Table 4. Treatment outcome (n = 275)

Outcome	n	Percent (%)
Recovery	145	52.7
Delayed recovery	102	37.1
Fatal	28	10.2
Total	275	100

The majority of acute poisoned patients treated at the PCC recovered (52.2%). There were 102 patients (37%) discharged from hospital with consequences, 28 patients (10.1%) died.

IV. DISCUSSION

This study provided information about clinical characteristics and the treatment of acute poisonings in 275 documented older patients at Vietnam PCC from January to August 2019. Concerning about the gender among acute poisoned elderly, female was more common than male (55.4% vs 44.2%). For each age group, the percentage of acute poisoning in women was always higher than men. The results of this study differed significantly from those of other acute poisoning patients at the Poison Control Center. According to Ha Tran Hung⁶ and colleagues, the ratio of men to women was 1:1. This difference will be discussed further in the acute poisoning agent. According to the results of this study, the age group most commonly poisoned was from 60 to 69 years old (68.5%), this is consistent with the population pyramid and the psychology of the Chen Feng.²

In our study, up to 47.5% of patients had clear, prolonged symptoms, while 30.4% of patients had life-threatening symptoms. This percentage was larger than the result obtained in previous study in all ages (16.2%).⁶ This may be explained that in the elderly, there are physiological changes causing the symptoms of acute poisoning appear more pronounced and lasting.

Among the 275 patients who admitted and treated at the poison control center, 144

patients fully recovered accounting for 52.2%, 8 patients (37%) were hospitalized with sequelae, 28 patients (10.1%) died. According to the study by Barbara, conducted on patients over 60 years of age, the mortality rate was 1.4%,⁷ and research by Dang Thi Xuan and Nguyen Thi Du⁸ at the Poison Control Center in 2001-2003, the mortality rate was 0.84% and the study of Ha Tran Hung⁶ was 1.1%. Therefore, it is necessary to have a good education for people about poisoning.

In older people, there are many psychological and physical changes compared to other ages group, so the mortality rate is higher. In our country, there is a lack of modern equipment and the qualifications of health workers in front-line hospitals are limited. Transportation from provinces to the poison control center is still difficult. People's knowledge about how to use medicine safely is limited. This study can provide evidence for policy makers in controlling and reducing adverse outcome from acute poisoning.

V. CONCLUSION

The majority of older patients with acute poisoning presented in moderate condition. The intentional poisoned patients were more severe than unintentional patients. Support therapy was the main treatment. Other common therapeutic measures were gastric lavage, single dosage

of activated charcoal, modified diuresis, use of antivenom, extracorporeal therapies were less used in elderly with acute poisoning.

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