

EPIDEMIOLOGICAL ANALYSIS OF ACUTE INTOXICATIONS IN VARNA REGION FOR A 15 YEARS PERIOD

Petko Marinov, Sneza Zlateva, Yulichka Sabeva*, Marieta Iovcheva

Department of Toxicology

**Laboratory of Chemistry Toxicology Investigations*

Military Naval Academy – Hospital Base for Active Treatment – Varna, Bulgaria

SUMMARY:

The difficult transitional period to a market economy gives its reflection on the number of the acute intoxications. They can be used as a social barometer of the politico-economic changes in our country. During the last 15 years a steady tendency has been outlined in the dynamics of part of the acute intoxications expressed with minor deviations in the frequency. On the other side, the climate-related intoxications like mycetism or intoxications related to some stages of social development marked by “fashion trends” as use of narcotic substances and psychostimulants show significant differences.

PURPOSE:

Epidemiology research of acute exogenous intoxications during a period of 15 years in Varna and Varna district.

Tasks:

1. Analysis of acute intoxications relating sex and age.
2. Etiology sorting of the acute exogenous intoxications.
3. Following the dynamics of acute exogenous intoxications / AEI / during the period 1991- 2005 year.

Material and methods: A retrospective analysis of the acute exogenous intoxications during 1991-2005 has been done using the following medical documents from the Department of Toxicology, Naval Hospital- Varna : 1. Hospital Case of the Illness. 2. Ambulatory Journals of the out-patients.

The frequency of the main groups of ethyological factors causing AEI has been studied:

❖ Medicines: barbiturates, benzodiazepines, neuroleptics, antidepressants, mixed, others / analgesics, antibiotics, antihypertensives /- AEI from overdose or toxic effect from a therapeutical dose.

❖ Alcohols.

❖ Opiates.

❖ Mushrooms.

❖ Animals- snake bites, insect stings, fishes.

❖ Inhalation intoxications.

❖ Others: pesticides, plants, household products.

❖ Acute allergic reactions.

❖ Non- toxicological diseases and conditions.

RESULTS AND DISCUSSION:

During a 15 years period 17789 patients at the age above 14 years have been treated at the Department of Toxicology. 12 565 / 70,63% / of them were hospital in-patients. The relationship hospitalized / total number of treated patients during the first years of the above mentioned period is 94,15 %. The tendency of reducing the number of the hospitalized patients is clearly seen on figure №1. At the end of the period the hospitalized patients are less than 50% of all the patients who had sought medical help in the Toxicology Clinic. This has led to a definite economic effect. We consider that it is a result of the grown during the years medical experience of the physicians.

The sex distribution of the patients shows negligible higher frequency of AEI of women compared to AEI of men, 9058 / 50,92%/ to 8731 / 49,08 % /.

The acute exogenous intoxications in young age prevail – 6764 patients / 38,02% / were from 14 to 24 years old. 72,39 % of all the AEI are in the age group 14 - 44 years old.

The acute medicine intoxications are most of all- 5862 cases / 32,95% /. At the beginning of the period about a half of all the AEI were due to medicine intoxication. Last 2 years we notice a well expressed tendency for reduction of medicine intoxications- 14,7% in 2004 and 13,4% in 2005 from all the patients who have sought medical help in Toxicology Clinic/ figure 3/.

Benzodiazepine intoxications are most often- 1867 cases / 31,85% of the medicine intoxications /, that is, 10,5 % of all the intoxications. In fact their frequency is even higher because they participate in a great number of the mixed intoxications. Later we also notice a tendency to a reduction of benzodiazepine intoxications. According to us this is a result of the more strict control of prescribing and bying of sedatives and hypnotica from the pharmacies last

3 years. Medicine intoxications with neuroleptics and antidepressants show slight changes during the years.

On the second place in frequency are the alcohol intoxications – 13,5%, which show non significant deviations for the 1992- 2005.

Mushrooms intoxication / mycetism / keep the third place in frequency of the AEI- 12,36 %. Phalloid intoxication are 4,5% of all mycetism cases and 0,5% of all AEI. A significant variation has been established in their frequency during the described period – from 18,8% in 1996 to 4,14% in 2001. It is explained by climatic factors.

11,8 % are the allergic reactions after medicines, food etc. The most often causes are Penicillin antibiotics, Tubocin, Sulfonamides, Analgetics. A clear tendency for growing higher the frequency of the allergic reactions is noticed – from 3,22 % at the beginning to 19,96% at end of the period.

On the fifth place are the AEI after a contact with venomous animals- 1206 cases / 6.78% /.

Allergic reaction after a sting are due to insect stings by Hymenoptera / bees, asps, hornets /. The reactions of the treated patients are mainly generalized systemic/ allergic reactions as in cases of normal local or extended local allergic sting reaction medical help is rarely sought especially in specialized hospital.

Frequency of mycetism and of the acute allergic reactions.

Frequency of patients treated after a contact with a

venomous animal.

The acute inhalation intoxications have frequency 6,38% and do not show significant deviations during the years. The main ethiological are gas chlorine, fumes and mixed gases, gases, others.

Opiate and psychoactive intoxications / without medicines/ are 2.87%. Their frequency raises from single cases during the first years of the period to their maximum during the period 1998- 2001. In 2001 they are 7.25%.

The group called “other” includes intoxications with pesticides, household products, plants, etc. In dynamics their frequency does not show any significant deviations.

The group of the patients with non toxicological diagnoses / 7.84% / represents interest. It includes acute viral infections, cerebral; vascular incidents, preoperative allergological tests for anesthetics, etc. The greater part of these patients were consulted and treated as out-patients and were not admitted in Toxicology.

CONCLUSIONS:

1. The acute medicine intoxications keep a leading position in the structure of the acute exogenous intoxications. Their relative part is growing less during the last years.

2. The acute exogenous intoxications in the age group from 14 to 44 years prevail.

3. The frequency of the acute allergic reactions is growing higher steadily.

REFERENCES:

1. Christakis-Hampas M. et al. Acute poisoning and sudden deaths in Crete: a five year review (1991-1996). *Vet. Hum. Toxicol.*, 1998, 40 (4), 228-230.

2. Daisley H., V.Simmons. Forensic analysis of acute fatal poisoning in the southern districts of Trinidad. *Vet. Hum. Toxicol.*, 1999, 41 (1), 23-25.

3. Guloglu C., Hamdi K.I. Acute poisoning cases admitted to a

university hospital emergency department in Diyarbakir, Turkey. *Hum. Exp. Toxicol.*, 2005, 24 (2), 49-54.

4. Singh D., S.Tyagy. Changing trends in acute in acute poisoning in Chandigar zone: a 25 year autopsy experience from a tertiary care hospital in northern India. *Am. J. Forensic Med. Pathol.*, 1999, 20 (2), 203-210.

5. Srivastava A. et al. An epidemio-

logical study of poisoning cases reported to the National Poisons Information Centre, All India Institute of Medical Sciences, New Delhi. *Hum.Exp.Toxicol.* 2005, 24 (6), 279-285.

6. Yamashita M. et al. Analysis of 1000 consecutive cases of acute poisoning in the suburb of Tokio leading to hospitalization. *Vet.Hum.Toxicol.*, 1996, 38, 34-35.

Address for correspondence:

Dr. Petko Marinov

Department of Toxicology, BBAL - Varna,

3, Hristo Smirnenski Str., Varna, Bulgaria

Fax: 00359 52 387 917; Mobile: 00359 899 982 700;

E-mail: eurohospital.bg@abv.bg;