

AN INVESTIGATION OF THE FREQUENCY OF EXOTOXIC COMAS IN VARNA REGION FOR A PERIOD OF 10 YEARS

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SUMMARY:

Purpose: Study of the acute exogenic coma (frequency, degree and duration). Some specific and diagnostic procedures in coma status, and supportive and detoxic- removal treatment.

Material and methods: 5381 patients (treated in Naval hospital –Varna) with acute intoxication have been examined in 10 years period (1995-2005). The coma status was defined with IV degree scale. The duration of the coma was measured in hours and days. The toxic substances were established after gas-chromatography analyses.

Results: We establish $5.52 \pm 0.31\%$ coma frequency in all of the acute intoxications. In deep coma status was 38.72%, in superficial coma - 61.27%. Under endotracheal intubation was 38.72%, without - 61.27%, with SPV (supportive pulmonary ventilation)- 13.46%. The pool of patients with short coma (until 6 hours- 37.71%) is with the most frequency, the next are - until 24 hours; 48 hours, until 3 days and more than 3 days. Our investigation gives information about actual xenobiotics that cause most often heavy intoxications, sometimes with exitus letalis.

Key words: acute intoxication, coma, shock, SPV, extracorporeal detoxication.

INTRODUCTION:

Under the influence of exogenic toxic substances on the nervous system quantitative disturbances of the consciousness occur which are defined as a toxic coma. This condition creates an immediate risk for the patient because of the dropping out of important regulatory mechanisms that ensure the homeostasis of the organism (2,3,7). The cerebrotroxines damage most severely the neurons that have an intensive metabolism, followed by the oligodendrocytes, astrocytes, microglia and the

capillary endothelium cells (5). The mechanism of the toxic damage is either by a direct action on the neurons or indirectly by disturbing the breathing, circulation; other regulatory mechanisms of the organism or combined mechanisms (4, 6).

AIM:

An investigation of the frequency, severity and duration of exotoxic comas, the characteristics of reanimation and detoxic-depuration treatment of patients in exotoxic coma.

MATERIAL AND METHODS:

5381 patients with acute exogenous intoxication treated at the Department of Toxicology –Varna during the period 1995-2005 have been investigated.

The stage of the comatose condition was defined according to the 4-grade scale of Bozinov (1) and to the division of the comas to superficial and deep. The duration of the coma was measured in days and hours. The nosology diagnosis was defined using anamnesis and clinical investigation and confirmed by a toxic chemical analysis.

RESULTS AND DISCUSSION:

The number of the patients with toxic coma was 297, from a total number of 5381 patients with acute oral and inhalation intoxication. That means that the toxic comas share related to the total number of intoxications is $5.52 \pm 0.31\%$ ($P < 0.05$). The degree of consciousness depression has been estimated as superficial and deep. From all 297 cases of toxic coma the greater part of the patients were in a superficial coma - 182 (61,27%) while 115 patients (38,72 %) were in a deep coma. The duration of the comatose state of the patients with toxic comas was different - from 6 hours to several

days. Short continuance coma is more characteristic for the acute intoxications. The greatest share is that of the patients who were in coma 6 hours - 112 cases (37.71%), followed by those with coma duration 12-24 hours – 80 cases (26.94%); on the third place - coma duration 6-12 hours - 36 cases (12.12%); 24-48 hours coma duration - 23 cases (7.74%); coma duration 3 days - 19 cases (3.37%); 4 days - 9 cases(3.03%); 5 days - 7 cases(2.26%); 6 days – 6 cases (2.02%); 7 days – 5 cases (1.68%); coma duration 8, 9 and 10 days - 3 cases each period. From all 297 patients with toxic coma, 115 (38.72%) needed endotracheal intubation and 40 of them (34.78%) needed apparatus ventilation. Comatose patients who were also in a state of shock were 115 (38.72 %). The number of intoxications with one substance was 216 (72.72%). 81 patients (27. 27 %) had intoxications with two or more medicines or a combination of medicine and alcohol, etc.

In order of frequency the monointoxication comas were caused by: ethanol, medicines /barbiturates,

gluthetimid, Tardyl, benzodiazepines, Organs phosphates compounds, heroin, neuroleptics, anticonvulsants, antidepressants, Rimicid, Baclofen, methanol, carbon monoxide.

The methods of extracorporeal detoxification (haemodialysis, carbohemoperfusion, hemosorbition, plasmapheresis) had been applied after a strict selection of the cases because of the numerous possible risks and also because of their high cost price. 30 patients of 297 (10.10%) were treated by extracorporeal detoxification methods.

Conclusion: There are great number of cerebrototoxic agents that can affect the nervous system of the man through different mechanisms. Exploring the mechanisms of their action, as well as treatment of the damages caused by these toxic agents is an important task for the Department of Toxicology. During the 16 years from its creation the efforts and experience of the whole team of this department have been directed towards this aim.

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