AJPMHS
GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 3, Issue 2, 2025 ISSN (E): 2993-2149

Forensic Medical Evaluation of Acute Desomorphino Poisoning with Pathological Changes in Internal Organs

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Abstract: the study of the results of clinical and laboratory studies in cases of acute poisoning with semi-synthetic drugs desomorphine (Crocodile) showed that the most effective methods of their detection are toxicological analysis and gas-liquid chromatography. During forensic medical examinations, pathomorphological signs on internal organs, characteristic in such cases for acute poisoning, became a clear manifestation. Including transfusion of reddish and purple blood with large and small dots on the internal organs, the dura mater.

Keywords: desomorphine, crocodile, poisoning, blood transfusions.

Introduction

In the last decade, the number of acute poisonings with semi-synthetic narcotics has increased significantly. The composition of this drug is desomorphine, which was developed as a morphine substitute and a drug for treating diseases, but today these drugs are used not only as a narcotic in drug addiction, but also for suicide or criminal purposes.

The aim of the study is to develop morphometric indicators that occur in morphofunctional zones of some internal organs as a result of acute poisonings with semi-synthetic narcotics, conduct their quantitative analysis, and conduct a forensic medical assessment of the main thanatogenic stages of this poisoning. It is important to create a mechanism for preventive measures aimed at preventing poisonings with narcotics, and to improve modern methods for reducing and eliminating complications of the disease [3, 5].

The purpose of the research: to improve the expert assessment of pathomorphological signs in poisoning with semi-synthetic "crocodile" drugs.

Research materials and methods: analysis of the conclusions of forensic medical expertise of 29 cases of acute poisoning from semi-synthetic narcotic substances in the Bukhara branch of the Republican Forensic Medical Expertise Scientific and Practical Center.

Retrospective, morphological, morphometric and statistical examination methods were used for the purpose of inspection.

Results of the research: In all studied cases, the results of pathomorphological examinations were also analyzed for the correctness and validity of forensic medical expertise diagnoses in acute intoxications from semi-synthetic narcotic substances.

The basis of this work was a retrospective analysis of the corpses and their expert opinions of 11 cases of acute poisoning with semi-synthetic "crocodile" narcotic substances selected from the archive materials of the Thanatology Department of the Bukhara Regional Branch of the Republican Center for Forensic Medical Examination in the period from 2020 to 2022, as well as a retrospective analysis of the forensic medical examination opinions of 18 cases of acute poisoning in 2020-2022. Our investigations were carried out based on the data of the protocols, the data recorded in medical documents, and the manifestation of these signs, which includes cases that occurred no more than 48 hours after the incident (Figure 1).

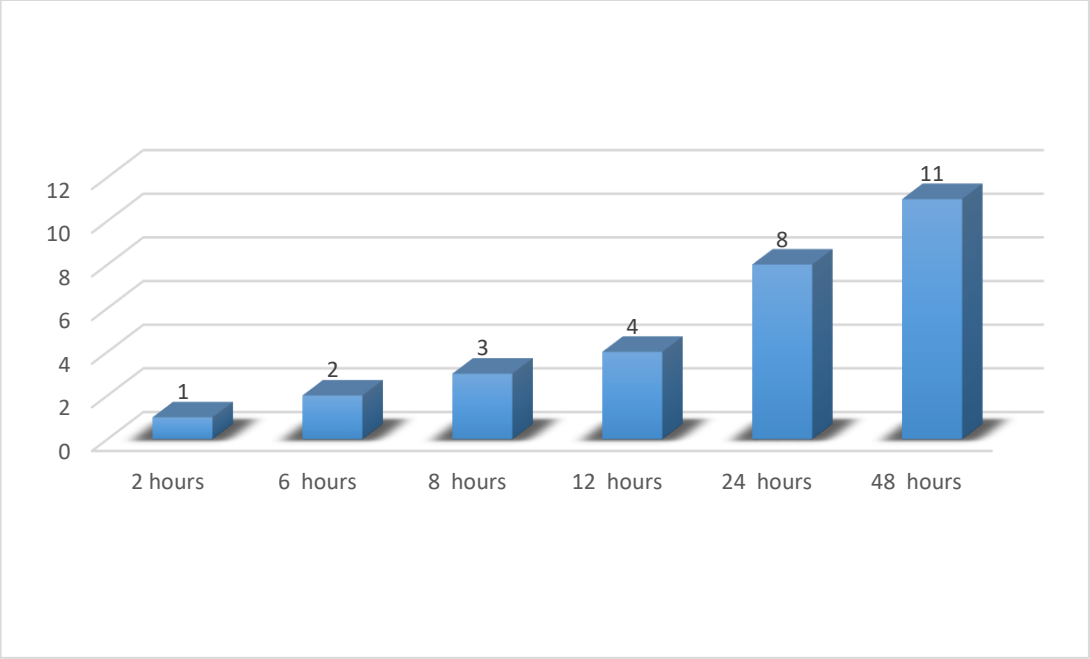

Figure 1. Cases that do not exceed 48 hours from the time of the incident

Our research was based on a systematic approach based on the use of retrospective, morphological, morphometric and statistical methods

Researches In the Bukhara regional branch of the Republican Scientific and Practical Center for Forensic Medical Examination, forensic medical examinations of cases of death due to acute poisoning with semi-synthetic narcotic substances in minors aged 14-18 years, as well as persons aged 18-45 years, were studied. During the examinations, a total of 3 people were found between the ages of 14-18, of whom 2 were men and 1 woman, a total of 10.4%; a total of 9 people were found between the ages of 18-22, of whom 5 were men and 4 were women, a total of 31.1%; a total of 9 people were found between the ages of 23-35, of whom 6 were men and 3 were women, a total of 31.1%; A total of 7 men and 1 woman were aged 35-45, accounting for 27.6%. Their average age was 27.3±4.3 years (Figure 2).

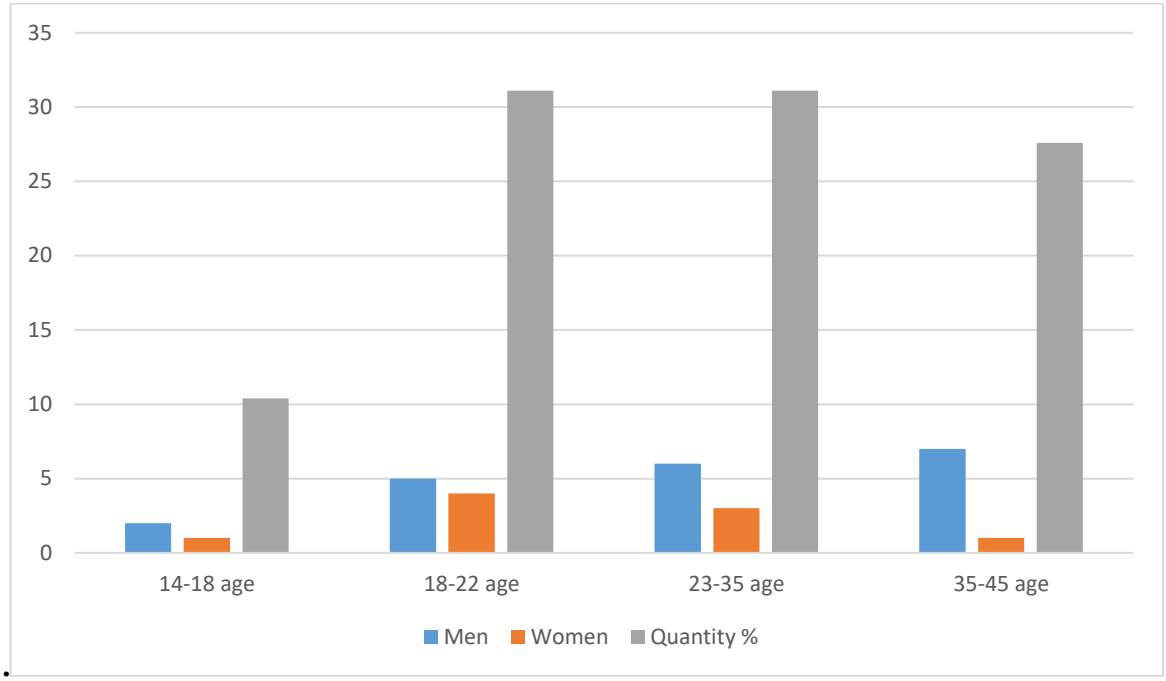

Figure 2. Distribution of examination materials by gender

In this study, the results of pathomorphological and forensic laboratory studies in cases of acute poisoning with the semi-synthetic narcotic drug desomorphine (crocodile) were analyzed.

A significant feature of our research was that in 18 cases selected for observation, the minimum amount of desomorphine (crocodile) in the blood of the victims was 2.6 mg/l, the maximum amount was 129 mg/l, and the average amount was 5.3 and 0.9 mg/l. The fact that these indicators are more common in men than in women was also forensically substantiated, for example, in 11 men the average blood volume was 62.4%, and in 7 women the average blood volume was 39.7%.

A study of the results of clinical and laboratory studies in cases of acute poisoning with the semi-synthetic narcotic drug desomorphine (crocodile) showed that the most effective methods for their detection are toxicological analysis and gas-liquid chromatography.

In forensic examinations, pathomorphological signs of acute poisoning in internal organs were clearly visible in such cases. In particular, large and small punctate redness and purple hemorrhages in the internal organs and the dura mater.

Similarly, weak development or complete absence of cadaveric spots (as a result of internal bleeding) was also observed in 9 corpses. In such cases, it has been proven that the main reason is the hemocirculation disorder, the development of acute internal bleeding from small blood vessels as a result of acute poisoning in the body.

A similar type of bleeding was found in internal organs: in the tissues of the pancreas, in the mucous membrane of the renal pelvis and urinary tract, in the mucous membrane of the stomach, in the brain. Macroscopically, the presence of hemorrhages in the lung parenchyma and the presence of Tardie spots were also observed in almost 50% of our examinations. In addition, subpleural hemorrhages were twice as common as subepicardial hemorrhages.

In 83.4% of the cases, it was observed that the cerebral venous blood vessels were full of blood, and at the same time, cerebral edema was observed.

The purpose of the study was also to determine the severity of chemical damage after acute intoxications from desomorphine (crocodile) semi-synthetic narcotic.

Conclusion: the information about pathomorphological changes that develop step by step in intoxications from desomorphine (crocodile) semi-synthetic narcotics allows us to speculate

about functional changes in the body, systemic failure of control of all organs of the body. The obtained results can serve as an additional factor of investigation in the case of desomorphine (crocodile) semi-synthetic narcotic intoxications in the forensic medicine assessment of their severity.

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