Relevance of the study is determined by a large number of seasonal wild mushroom and conditionally edible mushroom poisonings in Kyiv region which are accompanied by severe course of poisonings (especially among children), high rates of in-patient mortality, extremely high cost and complexity of treatment.

**Objective** is the analysis of the most common toxic syndromes and emergency conditions arising out of poisonings by wild poisonous and conditionally edible mushrooms spread in Kyiv region.

**Materials and methods**

Materials of the study were cases of acute wild poisonous and conditionally edible mushroom poisonings among adults in Kyiv region since 1995 till 2015 (in total 1587 cases). All patients received in-patient treatment at the Department of Toxicology of Kyiv City Clinical Emergency Hospital. The retrospective analysis of clinical and laboratory examination results and treatment of patients were conducted. The following research methods were used: analytical and comparative analysis. Data from the reports of the US and Canada Poison Control Centres, clinical studies and EU countries topical reports regarding these issues were used. Generalized research developments of the teams of authors of the Chairs of Anaesthesiology (headed by Professor I.P. Shlapak) of Shupyk National Medical Academy of Postgraduate Education are devoted to the problem of diagnosis and treatment of mushroom poisonings.

**Results and their discussion**

According to the results of the conducted study it was found that depending on the type of a mushroom toxin, acute poisoning phase and according to the clinical manifestations all cases of wild mushroom acute poisonings were divided into three groups. The first group incorporated cases of mushroom poisonings with gastroenterotropic action; the second one – with neurotropic action; the third one – with hepatonephrotropic action. During the study period mushroom poisonings of hepato-nephrotropic action constituted 15.2% (242 cases); of gastroenterotropic action – 81.3% (1,314 cases); of neurotropic action – 1.9% (31 cases). Variety and variability of symptoms of wild mushroom acute poisonings necessitates the thorough differential diagnosis of a wide range of somatic and infectious diseases. All pathological conditions considered as “mushroom poisonings” were categorized as follows: highly toxic mushroom poisonings (*Amanita phalloides* and *Amanita*); toxic infections and botulism; acute pesticide poisonings, poisonings caused by metals, radionuclides and other toxicants contained in mushrooms in excessively high concentrations; acute and chronic abdominal diseases in the exacerbation stage. Cases of acute pesticide poisonings or poisonings by metals and other toxicants contained in mushrooms in high concentrations are recorded mainly in Donetsk, Dnipropetrovsk, Mykolaiv, Kirovohrad regions. Another important factor that increases the risk of wild mushrooms consumption for humans is mushroom contamination with radioactive material. For 30 years after Chernobyl Nuclear Power Plant accident radioactivity build-up levels of $^{137}\text{Cs}$ in forest litter and forest soils decreased mainly due to radioactive decay (currently level is 56% of initial activity). However, radioactive products still continue to penetrate through the root system into wood, leaves, berries and mushrooms, in particular. Therefore, unlike agricultural products, contamination level of which reduced rapidly, crop and livestock products collected naturally in the most contaminated areas demonstrate high level of radioactivity build-up of $^{137}\text{Cs}$. For example, radioactivity level in mushrooms sometimes reaches several tens of Bq/kg.

With respect to the long-term experience of treatment of patients with acute mushroom poisonings, the team of the Chair of Anaesthesiology and Intensive Care of Shupyk National Medical Academy of Postgraduate Education with participation of toxicologists has developed the treatment regimen for patients with Amanita poisonings and has offered classification of pathological conditions that develop after consumption of wild mushrooms. The following pathological conditions were determined: poisonings by highly toxic (lethal) mushrooms; poisonings by conditionally edible mushrooms which were not duly cooked and preserved toxins; poisonings by mushrooms that grow in places contaminated by various toxins and which accumulate them; food toxic infections that develop as a result of consumption of mushrooms
infected by pathogenic microflora; botulism; exacerbation of chronic diseases of the digestive system (gastritis, pancreatitis, cholangitis, hepatitis, colitis, peptic ulcer disease, etc.).

In the course of conduct of the differential diagnosis of acute wild mushroom poisoning one should rely on the following: presence of the fact of mushrooms consumption by the patient (in the form of any mushroom dish); presence of the positive epidemiological history (presence of signs of poisoning in the majority of persons who ate suspicious food together); onset of primary poisoning symptoms (gastroenteritis, gastroenterocolitis) in 6 hours from the moment of mushrooms consumption (commonly 8-12 hours); the course of gastroenteritis without fever during the first 1-2 days; “well-being” phase that is manifested in resolution of enterocolitis and which lasts for 1-2 days, and thereafter jaundice appears. For timely response to the development of hepatic and renal failure in patients whose condition during hospitalization is considered as moderate or severe, it is recommended: to hospitalize patients at risk only to Intensive Care Units with experienced physicians and nursing staff; to provide the staff with the means of antidote, infusion and symptomatic therapy; to provide these Departments with equipment for extracorporeal detoxification procedures (plasmapheresis, haemodialysis). In cases of mass poisonings in families the following measures should be taken: to hospitalize patients from the focus of mushroom poisoning (even if no clear signs of poisoning are present) to in-patient departments under intensive supervision and examination for up to 3 days; to provide active detection and search for persons who consumed mushrooms together with the hospitalized ones but who did not seek medical advice in order to ensure emergency clinical and laboratory examination and monitoring.

Conclusions

Due to the fact that no laboratory identification of mushroom toxins is conducted in Ukraine because of the high cost of studies, lack of equipment, complexity of mycological identification, the diagnosis “mushroom poisoning” (T62.0) should be based on toxicological and epidemiological history, clinical manifestations, clinical and biochemical data and results of supplementary research methods. In cases difficult for diagnosis related specialists (neurologists, gastroenterologists, surgeons, infectious disease specialists) should be involved.