

# Acute poisonings among rural inhabitants of the Lublin province

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## INTRODUCTION

Accumulation of xenobiotics in the environment of life and work may lead to accidental, suicidal or occupational poisonings among both farmers and members of their families.

## OBJECTIVE

The objective of the study was the clinical and toxicological analysis of acute poisonings among inhabitants of the Lublin province, based on medical records of patients treated in the Toxicology Clinic at the Institute of Agricultural Medicine (IAM) in Lublin, due to acute poisoning. The treatment was extended by catamnestic examinations performed after poisoning at the Outpatient Department for Toxicology at the Institute.

## MATERIAL AND METHODS

The material for the study were medical records concerning 466 patients provided with inpatient treatment due to acute poisoning, as well as charts pertaining to the patients who reported for catamnestic examination at the Institute's Outpatient Department. In the material analysed, apart from such demographic data as age, gender, occupation performed, marital status, basic source of maintenance, attention was also paid to the motivation for acute poisoning, and socio-environmental circumstances preceding the poisoning. In addition, toxicological analysis was performed of the organ changes, the course and outcome of the poisoning, as well as psychosomatic disorders prior to poisoning.

Biochemical markers of the organ changes were determined by methods generally adopted in toxicological and general diagnostics in the Institute's Clinic laboratory.

## RESULTS

In the group of patients examined, males dominated (293, mean age 38), compared to females – 173, mean age 33.

The most frequent motivation for poisoning (57%) was a

suicidal attempt, and sometimes committed suicide, especially among adolescents and young adults. The subsequent considerably large group (38%) were accidental poisonings, followed by a small number of those associated with the occupation performed (6%).

The most frequent cause of poisoning were drugs (38%), especially when taken with suicidal motivation, followed by drugs in combination with alcohol (13%), and exclusively alcohol, including non-commercial alcohol (24%). The remaining causes of poisonings were plant protection products (9%), carbon monoxide (6%), wild mushrooms (3%), mineral fertilizers (1%), and household chemical agents, including solvents and detergents (5%) of patients.

Among the all 466 patients examined, 17% were conscious during admission to the Department of Toxicology. The remaining 61% were in the state of toxic coma.

## DISCUSSION

In the group of poisonings with drugs there prevail mixtures of various drugs, and those that were in the group of benzodiazepine-derived drugs. Poisonings with other groups of drugs constituted approximately 20% of the total number of poisonings.

Based on the clinical material examined concerning acute poisonings with xenobiotics among rural inhabitants of the Lublin Region, there dominated middle-aged patients who deliberately entered into contact with a xenobiotic by abusing alcohol or drugs for suicidal purposes. Similar observations were made by researchers at the Toxicology Clinic in Łódź who analysed poisonings in the whole territory of Poland [1, 2].

Both our observations – pertaining to farmers and all-Polish data concerning acute poisonings - show that the primary toxic agents were drugs and drugs in combination with alcohol [2].

In the group of drugs which are the cause of poisoning – according to both national and regional reports – mixtures of drugs dominate, followed by drugs of the benzodiazepine group [2, 3].

In the national statistics, drugs and alcohol are the main causes of death in acute poisonings. Poisonings with plant protection products, which occupy the fourth position in our study, are also placed on the fourth position according to the national statistics, despite the agricultural character of the Lublin province [4, 5].

In the national statistics concerning the years analysed, acute poisonings with pesticides are associated with 4%

mortality, with a zero number of deaths registered in the Lublin province [1-3].

A relatively large number of acute poisonings with carbon monoxide, household chemical agents, detergents and solvents, compared to the reports covering the whole country, is an alarming phenomenon. It may be presumed that the awareness of farmers and their family members in the area of safety and hygiene in work with these xenobiotics is insufficient, especially that the poisonings with this group of chemicals are of an accidental character, or are associated with work activities performed in agriculture.

## CONCLUSION

The dynamic growth in the use of mineral fertilizers and plant production products observed in agriculture, both on large-scale production and family farms, is not accompanied by an increase in morbidity among the rural population due to xenobiotics.

## REFERENCES

1. Jaraczewska W: Pesticides poisonings based on material from toxicological centres in Poland. *Acute Poisonings – Express Information* 1996, **1**(38).
2. Jaraczewska W, Czerczak S: Analysis of incidence of acute poisonings in the light of data collected from toxicological centres. *Acute Poisonings – Express Information* 1996, **1**(38).
3. Kotwica M: Causes of acute poisonings in Poland in 2000. *Acute Poisonings – Express Information* 2002, **2**(6).
4. Polewka A, Bolechała F, Skupień E, Trela F, Zięba A: Committed suicides and depression among elderly population. *Medical Review* 2002, **59**(4-5), 295-297.
5. Polewka A, Kroch S, Chrostek-Maj J, Pach J, Zięba A: Suicidal attempts by self-poisoning among the elderly. *Med Rev* 2002, **59**(4-5), 291-294.