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*Mercurialism in the material of the Regional Centre of Acute  
Poisonings of the Institute of Rural Medicine in Lublin*

Professional and accidental poisonings with mercury are infrequent despite its use by many manufacturers. Exposure to mercury under professional conditions is safeguarded by numerous regulations of the Industrial Safety code and by workers' awareness of a toxic effect of mercury and its vapours on the organism (1).

Suicidal poisonings with mercury salts occur rarely due to their withdrawal from the group of plant protecting substances. Mercury is also present in fungicidal preparations and dental amalgamates (3). Accidental consumption of metallic mercury is primarily observed among children playing with thermometers. In adults such cases may be of similar character.

**Case description.** A male patient aged 42 years with suicidal intention after previous drinking of a considerable amount of alcohol swallowed metallic mercury from the thermometer. On admission to hospital he was in toxic coma. On the second day of hospital stay he recovered consciousness and complained of abdominal pain and diarrhoea.

There was found an increased level of ethyl alcohol in blood serum to 3.54‰. Urinalysis showed proteinuria 27.38 mg/l with scanty leucocytes and single erythrocytes, presence of hyaline and fine-granular casts. X-ray of the abdomen showed numerous fine metallic shadows (Fig. 1). Chest X-ray revealed two metallic shadows within the bronchus of the lower lobe of the right lung. Control urinalysis showed regression of the changes. The patient left hospital in good general condition with the recommendation of ambulatory check-up.



Fig. 1

## DISCUSSION

In the material of the Regional Centre of Acute Poisonings of the Institute of Rural Medicine in Lublin 3 cases of mercurialism were treated in the years 1999-2001.

The above described course of poisoning, due to practically non-absorption of metallic mercury (inorganic) from the digestive tract, was mild. The other cases also had favourable course. The peculiarity of the described case was getting of mercury during swallowing to the bronchial tract which resulted in its transition into the ion form due to full access of oxygen. Mercury then gets into the circulatory system, binds with proteins of the plasma containing sulfhydryl groups leading to toxic renal changes, which are the organ with the highest mercury concentration in the body (5). Local irritation of the oral cavity and throat may occur to be associated with vomiting, dehydration, colic pains with bloody diarrhoea – the symptoms of colitis (8).

The symptoms of toxic renal damage and of CNS damage are essential (4). Mercury salts excreted via the urinary system lead to acute intraparenchymal nephritis with necrosis of renal tubules. Acute poisoning with inorganic mercury is one of the causes of acute renal insufficiency. It is produced by nephrotoxins, which in cases of chronic exposition result in immunologically complex nephropathy characterised by proliferation of connective tissue of the glomerule or by membranous glomerulitis (5). Renal damages with albuminuria may give symptoms of nephritic syndrome. Urinary secretion of mercury is a

good indicator of total mercury load of the body. It rarely amounts to 1.5 M daily under normal conditions. The toxic dose of HgCl is 0.5-2.5 g, mean 1.5 g.

Diseases of the peripheral nervous system have the character of toxic sensori-motor neuropathy (2). Organic components of mercury tend to affect the nervous system. Dysarthria, paralysis, tingling and vision defects may develop after weeks of exposure (7). Mad Hatter syndrome is characterised by hyperirritability, lability of mood and changes in intellect (6). Compounds of organic mercury get through the placenta and cause mental impairment of the foetus, cerebral palsy and convulsions.

#### REFERENCES

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#### SUMMARY

Against the background of clinical symptoms of mercury poisonings a case of suicidal poisoning which had favourable course and prognosis was presented. The impact of toxic renal damage and different CNS symptoms was emphasised.

Zatrucia rtęcią w materiale Regionalnego Ośrodka Ostrego Zatrucia  
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Na tle objawów klinicznych zatrucia rtęcią przedstawiono przypadek zatrucia w celach samobójczych o pomyślnym przebiegu leczenia i dobrym rokowaniu. Podkreślono znaczenie toksycznego uszkodzenia nerek oraz różnorodnych objawów ze strony CUN.