Poisonings with alkaloids of Veratrum in Russia

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Introduction: White Hellebore (Veratrum album - Lilaceae family) and Veratrum lobelianum Bernh are to be found in the European part of Russia, Siberia and Far East. More than 30 alkaloids were picked out of different Veratrum species, most dangerous are thought to be: proliferation, veratrine, veratridine (1,2). Fatal poisonings occurred.

Objective: Veratrine poisonings occasionally happen in Europe (1). Hellebore is used in Russia in veterinary medicine as an emetic. Some people consume hellebore tincture as cheap alcohol. Sometimes housewives, who are extremely tired of their husbands’ alcoholism, stir it in alcohol, in order to make them drop this habit. This hardly ever rescues people from alcoholism but may cause severe poisoning.

Results: Veratrine poisoning varied from 0.3% of hospitalized cases among acute poisonings in Irkutsk to 1.5% in Tyumen, 1.7% in Chelyabinsk and 2.2% in Yekaterinburg. The majority of patients were males – from 65% in Irkutsk to 85% in Tyumen and 87% in Yekaterinburg. Clinical features were weakness, sweating, nausea, vomiting, hypotension and slow heart rhythm in all cases. Consciousness disorders appeared in 44% of cases in Irkutsk but only in 7% for Yekaterinburg. One patient developed acute renal failure due to a long period of hypotension before admission and was treated with conventional hemodialysis for 26 days. Average duration of hospital treatment was 3.3 days in Yekaterinburg, 3.7 in Tyumen and 2.5 in Irkutsk.

There were 1 case of in-hospital death in Chelyabinsk and 2 cases of deaths on site in Irkutsk; the first – a 28 year old woman who ingested a hellebore root decoction and was found unresponsive after 7 hours; the second was a 68 year old man who had ingested 100 mL of 70% hellebore extract. He had a history of tuberculosis and chronic heart failure.

Conclusion: Veratrine acute poisoning is widespread in Russia. It causes cardiotoxic effects and rarely death.

References:

Method: A retrospective study of all cases of acute veratrine poisoning over 10 years (2003 – 2012) was carried out in 4 poisoning treatment centres in four cities: Yekaterinburg, Tyumen, Chelyabinsk and Irkutsk. Veratrine was identified in urine by GC-MS or thin-layer chromatography in all cases. Six hundred and sixty-eight cases were included in the study.

Age of patients

Pre-hospital ECG of patient with acute veratrine poisoning

Treatment given to veratrine poisoned patients

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