Epidemiology and mortality of hospitalized acute poisonings in Yekaterinburg and Oslo: A comparison of two cities
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Objective: Comparing poisoning epidemiology may be challenging due to differences in study design. We compare prospective data collected with the same study design covering two cities.

Methods: A one-year prospective, observational study of all acute poisonings in adults (≥16 years). Data on those admitted to hospital is presented.

The Oslo Study
- 1065 Admissions
- No complications: 743 (70%)
- Complications: 322 (30%)
  - No sequelae: 1052 (99%)
  - Sequealae: 5 (0.6%)
  - Death: 8 (0.8%)

The Yekaterinburg Study
- 1868 Admissions
- No complications: 1394 (75%)
- Complications: 474 (25%)
  - No sequelae: 1791 (96%)
  - Sequealae: 13 (0.6%)
  - Death: 64 (3.4%)

Poisoning pattern
- Oslo
- Yekaterinburg

Results:
The incidence of acute hospitalized poisoning was 1.4 and 2.0 per 1,000 in Yekaterinburg and Oslo, respectively. The most common toxic agents were ethanol (14% vs. 18% in Oslo) and benzodiazepines (9% vs. 15% in Oslo). In Oslo, a large proportion of poisonings were due to paracetamol or illicit drugs, whereas poisonings with cardiovascular drugs, neurolpeptics and antiepileptics were common in Yekaterinburg. The proportion presenting with a possible or definite suicidal intention was similar (47% vs. 46% in Oslo). The proportion with accidental drug overdoses was lower (11% vs. 37% in Oslo), while the proportion of other accidents was higher in Yekaterinburg (42% vs. 16% in Oslo). Interestingly, 1.1% of the poisonings in Yekaterinburg were classified as crimes. The mortality rate was four times as high in Yekaterinburg as compared to Oslo (3.4% vs. 0.8%, p=0.02), while sequela was similar (0.6% in both).

Poisonous substances in those who died
- Oslo
- Yekaterinburg

Conclusion: By using the same protocol in two large, prospective studies on poisonings in Russia and Norway, we were able to evaluate similarities and differences in poisoning pattern and mortality. Ethanol, benzodiazepines, opioids and CO from fires were common in both cities. GHB and paracetamol were also frequently found in Oslo, whereas cardiac medicaments and antiepileptics were more commonly seen in Yekaterinburg. The mortality rate in Yekaterinburg was a four-fold higher as compared to Oslo, whereas the sequela on discharge were similar.

Sequealae

Predictors of in-hospital mortality in Yekaterinburg

* p < 0.05
** p < 0.01
*** p < 0.001

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