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ACUTE POISONINGS ADMITTED TO A UNIVERSITY HOSPITAL IN BELGIUM: CHARACTERISTICS AND IMPACT ON THE COSTS

CONTEXT

Poisoning poses a significant global public health problem. According to WHO data, an estimated 193,460 people die worldwide from unintentional poisoning. Hospitals, and in particular emergency departments (ED), are faced with a considerable number of admissions leading to a substantial number of hospitalizations and costs.

AIM

The aim of the study is (1) to inventarize the characteristics of acute poisoning admissions to the emergency department (ED) in a Belgian university hospital, (2) to identify risk factors for hospitalization type and (3) to calculate the direct medical cost of acute poisonings charged by the hospital and paid by the government and the patient.

METHOD

Data of 2017 (1st January to 31st December) were collected and analyzed retrospectively using patients' medical records and hospital invoices.
Patients were categorized in three groups: (1) ambulatory patients discharged home after treatment in the emergency department (ED-amb), (2) patients requiring observation in the emergency department for a maximum of 24 hours (ED-24h) and (3) patients admitted to the hospital ward (Hosp). Factors possibly associated with the type of hospitalization were identified by logistic regression.

RESULTS

A total of 1,214 hospital admissions were included, accounting for 3.6% of all ED admissions. Men (62.2%) and the age group 21-40 years (43.0%) accounted for the largest proportion. Substances most commonly involved were ethanol (52.9%), benzodiazepines (9.7%), cocaine (4.9%), cannabis (4.6%), antidepressants (4.6%) and psychostimulants (4.6%). A total of 4,561 treatment acts were recorded, most commonly monitoring of vital signs (63.6%) and administration of intravenous drip or medication (62.9%).

Patients were discharged home after having received care in the emergency department (ED-amb) in 54.5% of admissions, were admitted to the emergency-department-24-hours-observation unit (ED-24h) or were hospitalized (Hosp) in 24.6% and 20.9% of admissions, respectively. Factors found to be associated with hospitalization type were hour of admission, category of ICD-10 involved agents, Manchester Triage Score, use of antidotes and need for medical imaging (all $p<0.05$).

The total direct cost for the treatment of 1,175 poisoned patients with an mandatory health and disability insurance amounted to €1,512,346.

CONCLUSION

Acute poisonings account for a considerable proportion of emergency department admissions representing a significant organizational and financial burden to hospitals and healthcare workers. Efficient triage of patients to the appropriate level of care in a safe and qualitative way contributes to avoiding the negative aspect of overcrowding in emergency departments, resulting in less time left for qualitative care for the most severe cases. In this context, insight into the elements associated with hospitalization is one of the key factors.

MESSAGES FOR OTHERS

Because of the difficulty to compare results between different emergency departments, it is strongly recommended to develop a uniform template aimed to support the highly-needed preventive and care measures with comparable facts and figures to be able to achieve the highest possible quality standard in the most cost-efficient way. The use of WHO International Classification of Diseases 10th Revision (ICD-10) is highly recommended. This use of a clear and international standard may be a first step in the development of a template for uniform data reporting and comparison between centers in order to facilitate international comparison.

INVOLVING PATIENTS, CARERS OR FAMILY MEMBERS IN THE PROJECT

Patients were included in the study when the reason for admission could be encoded in T36-T50 (poisoning by drugs, medicaments and biological substances) or in T51-T65 (toxic effects of substances chiefly nonmedicinal as to source) of the International Classification of Diseases (ICD-10-be).

Conflicts of interest

The authors report no conflicts of interest.

Ethics Approval

The study protocol was approved by the Ethical Committee of the Ghent University Hospital.

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