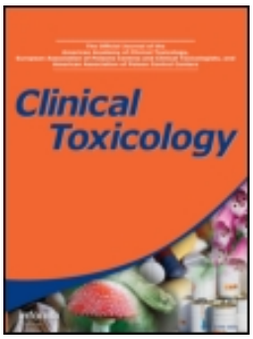

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Birgitta Jonsson, Eva Backman, Heléne Salmonson & Jonas Höjer

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LETTER TO THE EDITOR

Injection of crushed tablets—A prospective observational study

To the Editor:

Severe complications such as pulmonary granulomatosis are described after long-term, repeated injection of crushed tablets intravenously, but knowledge of the acute toxicity of this particular abuse is limited.[1–3] The aim of this study was to collect information of acute symptoms and risks after intravenous injection of tablets.

All inquiries to the Swedish Poisons Information Centre regarding intravenous injection of crushed tablets during a two-and-a-half-year period (January 2011–June 2013) were prospectively enrolled. When available, full hospital case records were collected and analyzed. The study was approved by the local Ethics Committee.

In total, there were 120 inquiries regarding unique cases of intravenous injection of tablets during the study period. Hospital case records were obtained in 71% of these cases, hence 85 patients constituted the final study population. There were 55 males and 30 females and their age varied between 16 and 54 years. In 74 of the cases (87%), a protracted drug abuse was known at presentation. In 40 cases (47%), multiple drugs had been injected. The most common substance injected was methylphenidate, followed by buprenorphine, opioids (morphine and oxycodone), and other drugs (benzodiazepine, pregabalin, and zopiclone). In about 75% of the cases, the acute clinical features correlated well with common toxic effects of the substances injected. Minor local symptoms such as edema and redness at the injection site were noted in 12 cases (14%). Fever developed in 25 patients, 6 of whom displayed high (C-reactive protein) CRP values indicating acute infection. Additionally, one patient developed other acute complications (Table 1). Most of the patients were discharged within 12–24 h. However, seven cases with pronounced acute symptoms were hospitalized during 48 h to 3 weeks. There was no fatality.

Respiratory symptoms were not observed in this study. Fever, on the other hand, seems to be a common clinical feature, probably because of pyrogenic reactions triggered by non-sterile solutions, a direct effect of the injected substance, or because of sepsis. This study shows that intravenously injected crushed tablets most commonly give rise to acute signs and symptoms related to the substances injected. However, in 7 of the 85 patients (8%), severe complications occurred (Table 1). The development of right-sided endocarditis is a recognized risk among patients with sepsis due to intravenous abuse, but there was no evidence for this complication in any of the cases in this study. Because of the potentially high risk for septicemia, it is recommended that CRP, body temperature, and blood cultures should be checked in all patients before discharge.

Table 1. The seven patients who developed acute, severe complications.

Gender	Age (y)	Substance injected	CRP (mg/L)/Temp. (°C)	Comments
M	27	Buprenorphine	143/39.5	Treatment with antibiotics Hospitalized for 6 days
F	24	Morphine	88/38.6	No information of treatment Hospitalized for 48 h
M	26	Methylphenidate Zopiclone Diazepam	79/40.3	Treatment with antibiotics Hospitalized for 3 days
F	20	Buprenorphine	114/unknown	Treatment with antibiotics Hospitalized for 5 days
M	26	Buprenorphine Zopiclone	147/40.0	Antibiotics. Injection in groin, abscess that called for surgery Hospitalized for 3 weeks
F	37	Methylphenidate	133/40.0	Treatment with antibiotics Hospitalized for 3 days
F	41	Methylphenidate	61/unknown	Developed DIC, hemolytic anemia and renal failure Hospitalized for 3 weeks

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Address correspondence to Jonas Höjer, MD, PhD, Swedish Poisons Information Centre, SE-171 76 Stockholm, Sweden. Tel: + 468-610-05-22. Fax: + 468-32-75-84. E-mail: Jonas.hojer@gic.se

A limitation needs to be mentioned. The study population consisted of a patient category that is obviously difficult to study and follow-up. Several of the patients insisted on being discharged from hospital before follow-up blood tests and a reasonable period of hospital observation had been carried out, indicating that the acute risks involved may be even greater than those implicated by the results of this study.

Birgitta Jonsson, Eva Backman,
Heléne Salmonson and Jonas Höjer
Swedish Poisons Information Centre, Stockholm, Sweden

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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