

EXPOSURES TO STOMATOLOGICAL PREPARATIONS, DENTAL PRODUCTS, AND EXPOSURES IN THE CONTEXT OF TOOTHACHE REPORTED TO THE POISONS INFORMATION CENTRE ERFURT FROM 1997 TO 2017

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Objective

We sought to examine cases of exposure to stomatological preparations (SP), dental products (DP), and all human exposures in the context of toothache (ECTA) as information on this subject is lacking.

Methods

Retrospective study of cases of SP, DP, and ECTA registered by the Poisons Information Centre (PIC) Erfurt from 1997 to 2017.

SP were classified according to the ATC code. DP like dental technical and filling materials belong to medical devices.

Symptom severity was assessed according to the Poisoning Severity Score (PSS)

Results

In total, 156 cases of exposures to DP (136 cases with different tooth filling materials), 1167 cases of exposures to SP), and 1310 cases of ECTA were registered.

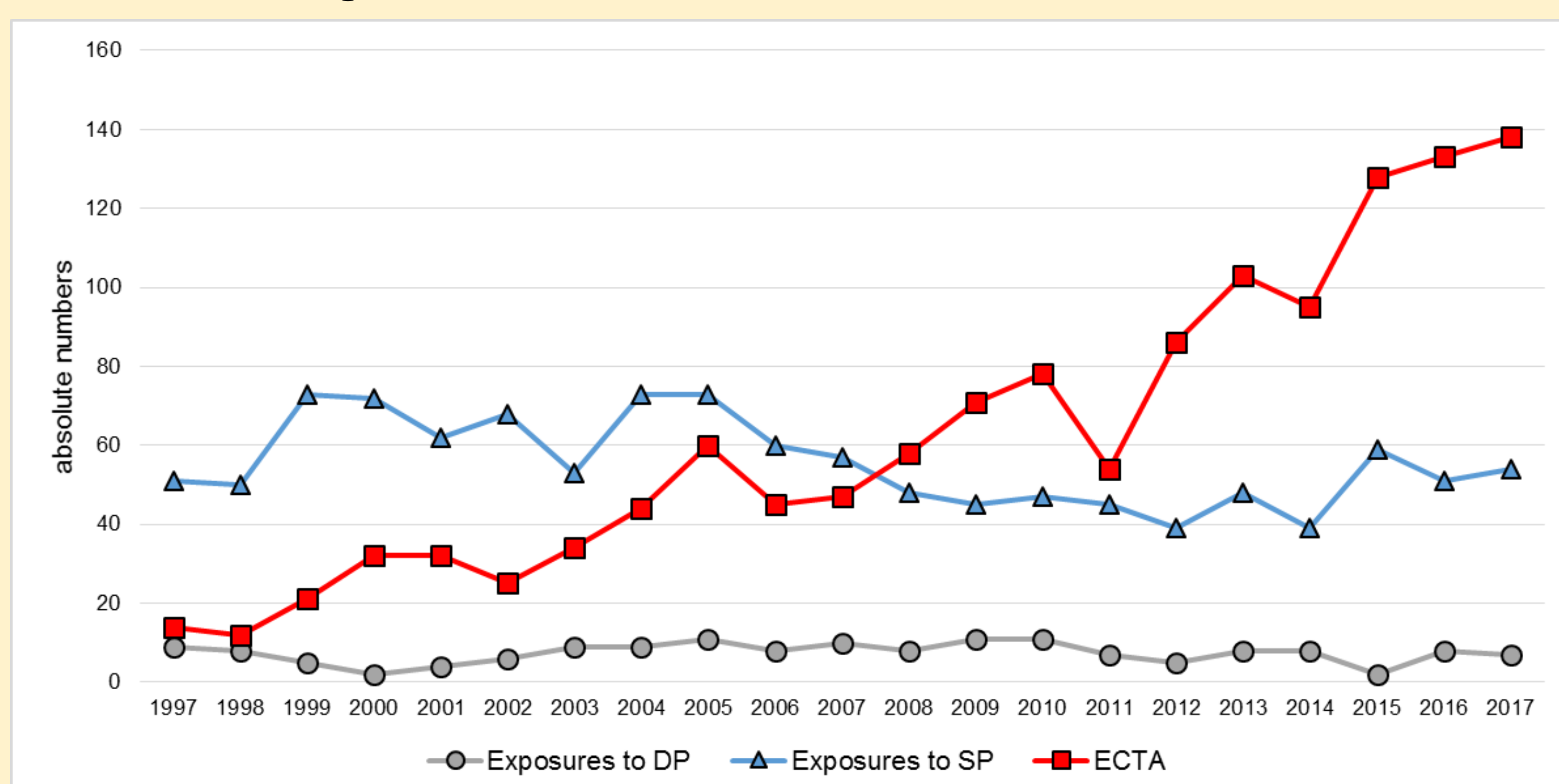


Fig. 1 Absolute numbers of exposures to dental products (DP), to stomatological preparations (SP), and in the context of toothache (ECTA) registered by the PIC Erfurt from 1997 to 2017

While no clear tendency in the frequency of exposures to SP and DP could be observed, there was an almost tenfold increase of cases in the context of toothache from 14 in 1997 to 138 in 2017 (**Fig. 1**).

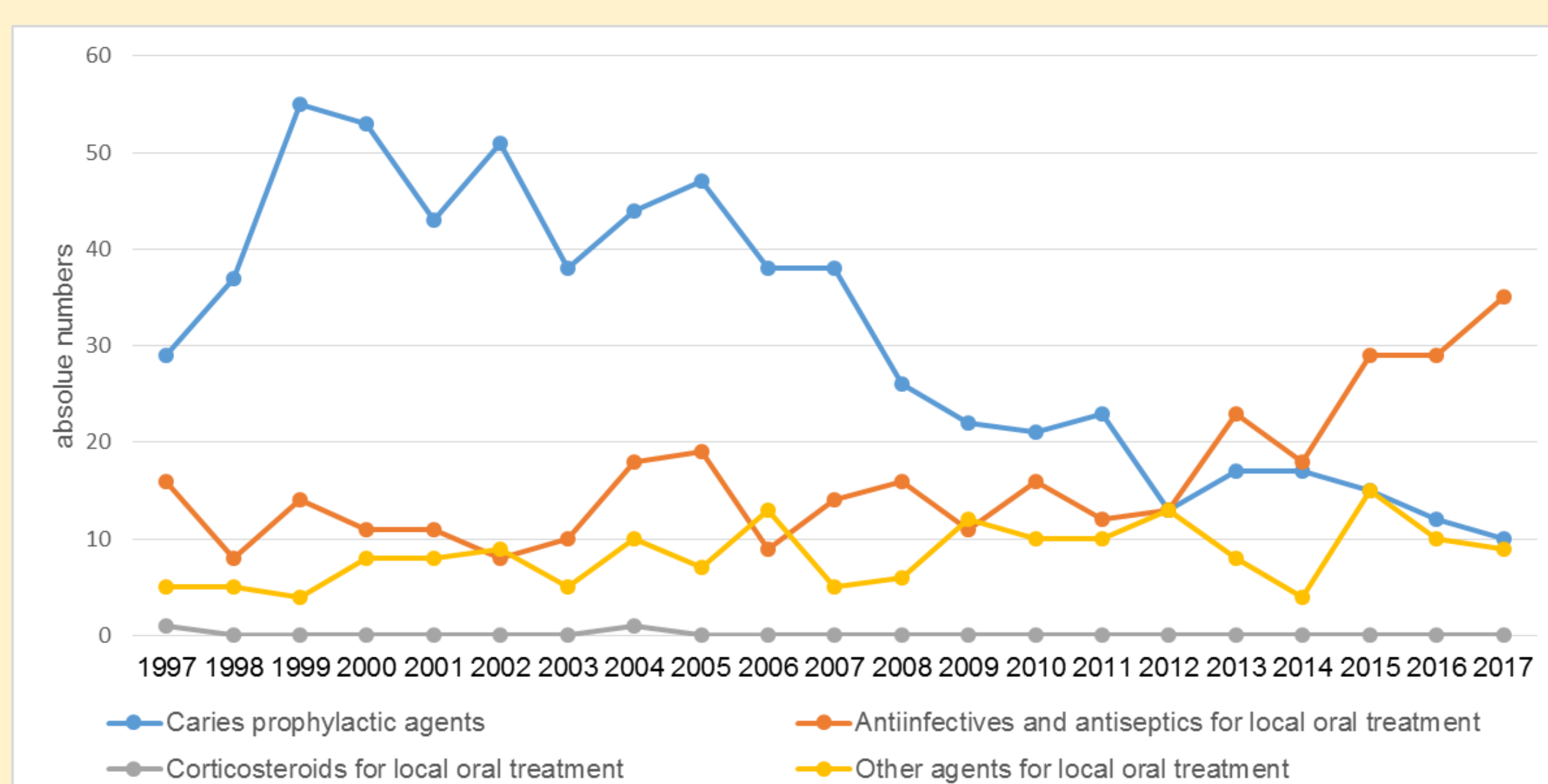


Fig. 2 Absolute numbers of exposures to stomatological preparations registered by the PIC Erfurt from 1997 to 2017

649 cases of SP (49.5%) were fluoride containing products (**Fig. 2**)

Symptom severity in exposures to DP and SP were asymptomatic or mild. In ECTA, however, 51 cases with moderate (5 cases with prolonged paracetamol overdose) and at least 5 cases with severe symptoms (3 cases with prolonged paracetamol overdose) were detected (**Fig. 3**). The two other cases with severe symptoms are described.

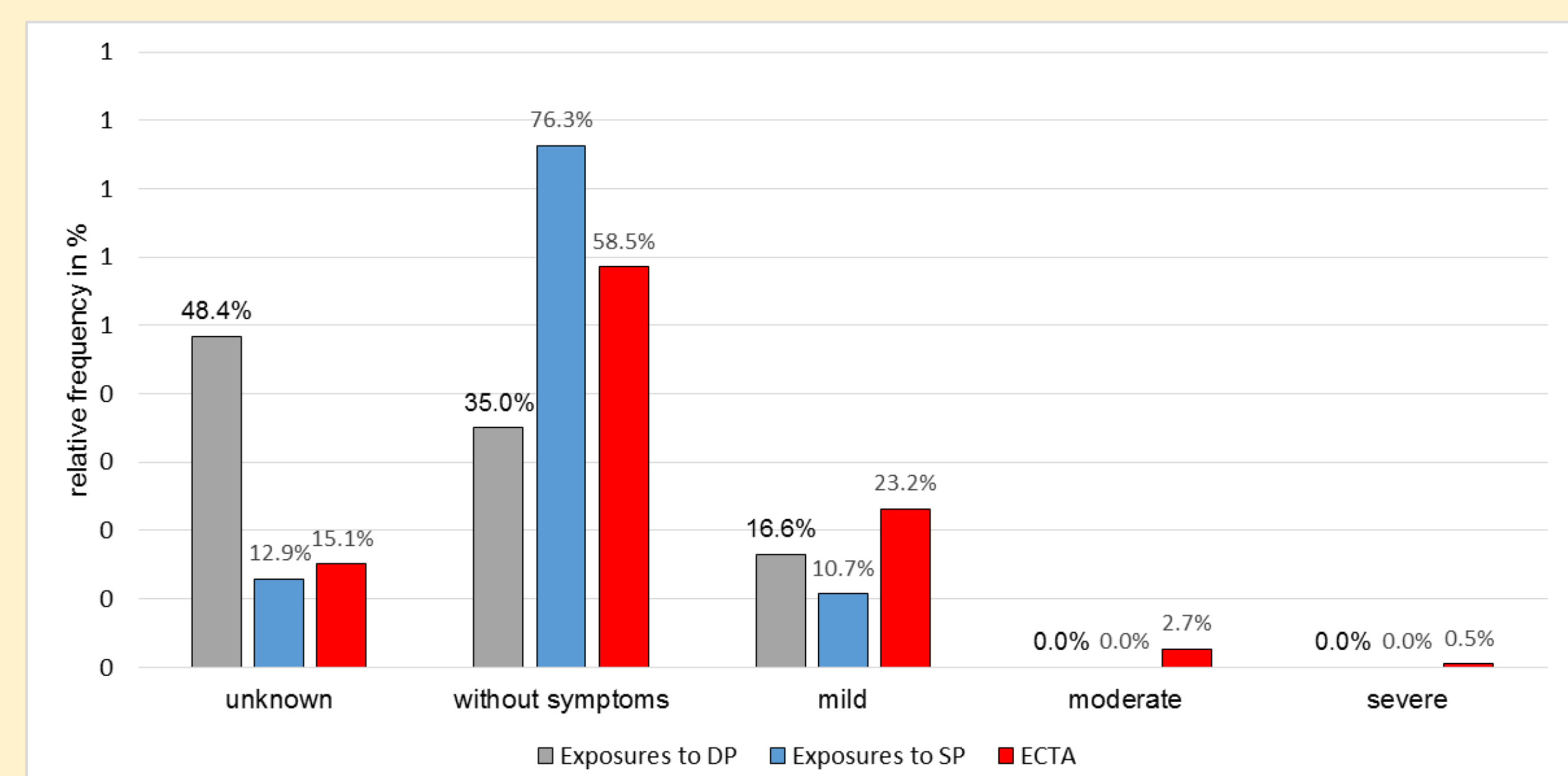


Fig. 3 Relative frequencies of symptom severity in exposures to dental products (DP), to stomatological preparations (SP), and in the context of toothache (ECTA) registered by the PIC Erfurt from 1997 to 2017

Case reports

Case 1:

Patient: A 41 year-old man under phenprocoumon therapy for chronic ischemic heart disease treated himself with unknown amounts of acetylsalicylic acid and metamizole over two days because of toothache.

Symptoms: Severe bleeding occurred following extraction of teeth by a dentist. The International Normalized Ratio (INR) could not be measured. Massive haematoma of the tongue, pharynx and hypopharynx required intubation and a tracheostoma. Coagulopathy was treated by administration of fresh frozen plasma and oral vitamin K. The serum metamizole concentration was approximately tenfold the therapeutic range.

Outcome: After treatment for 13 days on an intensive care unit the patient was discharged to a peripheral unit.

Case 2:

Patient: Gingival injection of lidocaine plus adrenalin in a 37-year old healthy woman by a dentist resulted in severe bradycardia and cardiac arrest.

Outcome: Intravenous administration of Akrinor (cafedrine/theodrenaline) restored cardiac function.

Conclusion

- Acute toxicity of stomatological preparations and dental products appears to be low.
- In ECTA, however, prolonged paracetamol overdose by the patient [1], and unawareness of an increased bleeding risk with concomitant intake of vitamin K antagonists and nonsteroidal anti-inflammatory drugs [2] can result in severe symptoms.

References

1. Vogel J, Heard KJ, Carlson C, et al. Dental pain as a risk factor for accidental acetaminophen overdose: a case-control study. *Am J Emerg Med.* 2011;29:1125-1129.
2. Cascorbi I. Drug interactions - principles, examples and clinical consequences. *Dtsch Arztebl Int.* 2012;109:546-55..