

IATROGENIC INTRAVENOUS MEDICATION ERRORS REPORTED TO THE PICs ERFURT AND GÖTTINGEN

Deters M (1), Prasa D (1), Schaper A (2), Hentschel H (1)

1. Poisons Information Centre Erfurt, Nordhäuser Straße 74, D-99089 Erfurt, Germany

2. Poisons Information Centre Nord, Göttingen

Objective

Referring to a previous study (1) we investigated the incidence of iatrogenic intravenous medication errors (IIME) reported to the Poisons Information Centres (PICs) Erfurt and Göttingen (responsible for 24.1 million inhabitants in 8 federal states).

Medication Errors

Patients

396 cases of IIME were consulted by the PICs. Patients affected were 25% children (75% of them babies and toddlers) and 75% adults. Among adults 43% were in the mean age group (18 to 65 years old); 21% were seniors, but in 36% the age remained unknown (Fig.1).

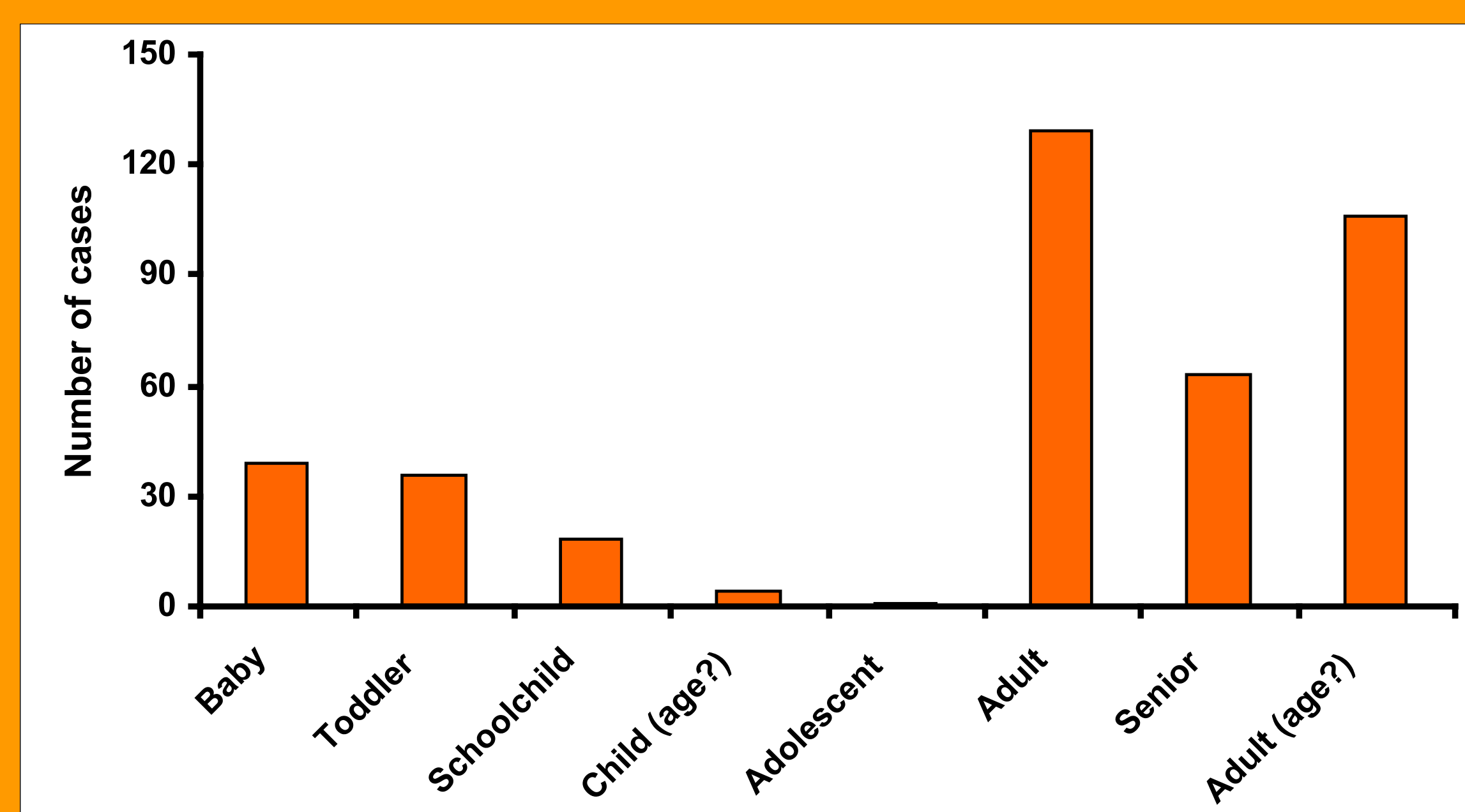


Figure 1: Age of patients affected by medication error

Method

Calls regarding IIME received by the two PICs from 1997 to 2006 were analysed retrospectively. Data were categorised into error types, age groups, drugs involved, and estimated risk of toxicity.

Type of medication error

The main types of errors were overdosage (41.2%) and wrong route of administration (29.8%) (Fig. 4).

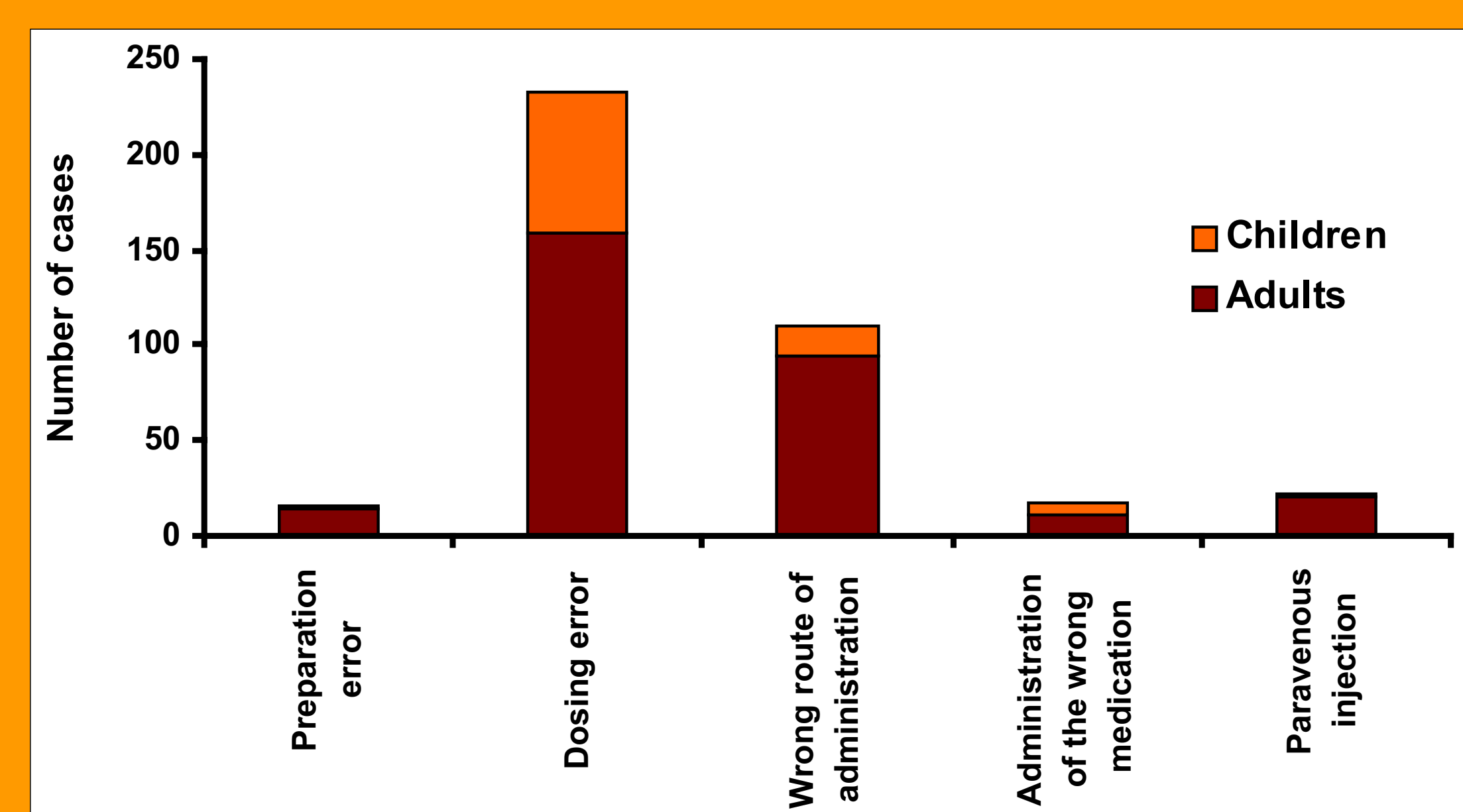


Figure 4: Most frequent types of medication error

Registered intravenous administration errors from 1996 to 2006

Cases of IIME increased from 18 in 1997 to 75 in 2006 (Fig. 2).

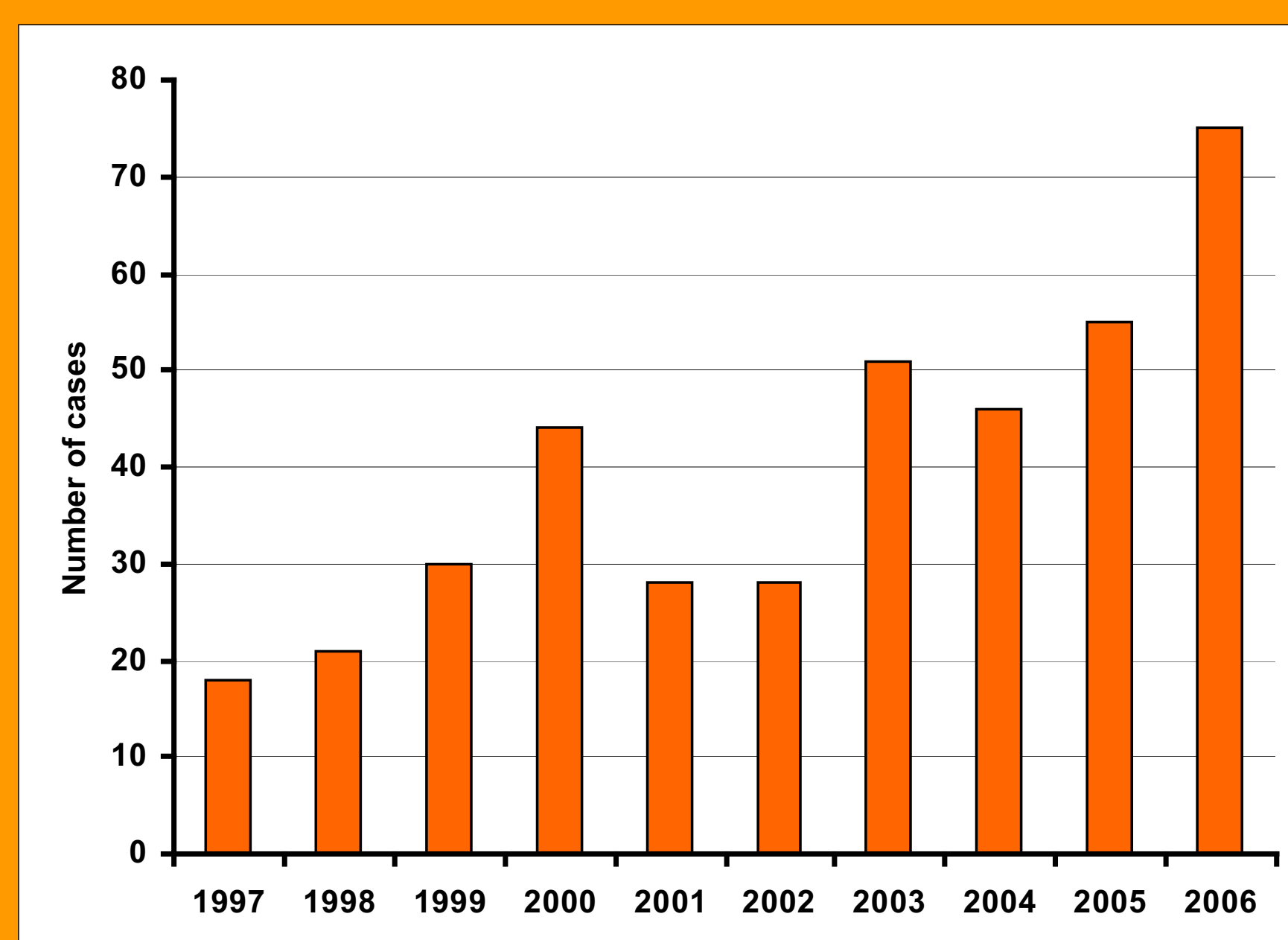


Figure 2: Registered intravenous administration errors (1996 to 2006)

Drugs involved in medication errors

Most frequent drug classes (ATC classification) involved were antipsychotics (8.3%), antithrombotics (5%), antihistamines for systemic use (5%), other systemic drugs for obstructive airway diseases (4.5%), and antimetabolites (3.8%) (Fig. 3).

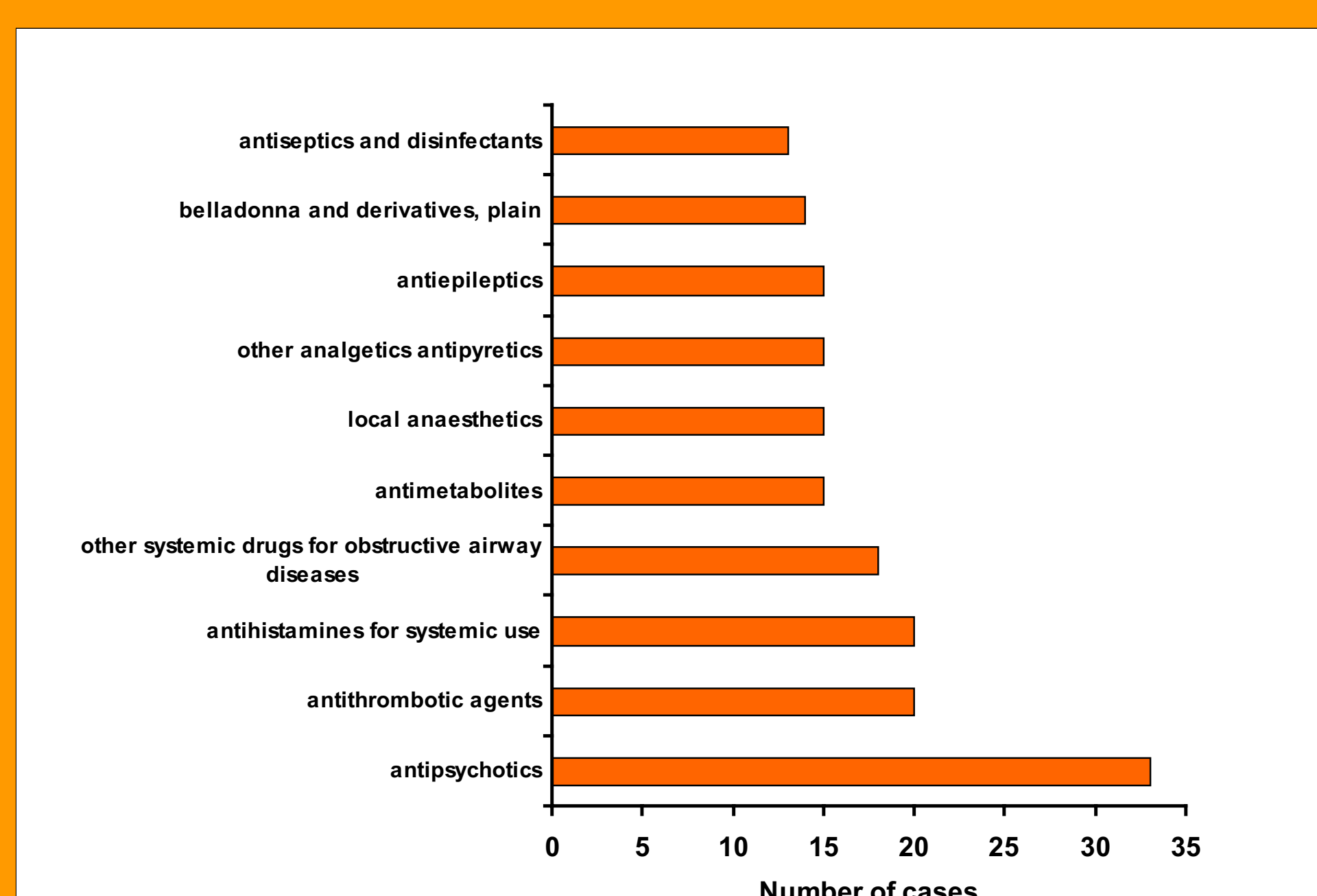


Figure 3: Most frequent drug classes involved

Estimated risk of toxicity

The estimated risk of toxicity was: 14.8% none, 80.1% risk, and 5.1% unpredictable risk. In 53 cases (13.4%) poisoning was estimated to be severe (Fig. 5). Medical treatment was recommended in 94.1% of cases. 71 patients (17.9%) were followed to a known outcome. 34 (47.9%) of these patients were asymptomatic and 37 (52.1%) symptomatic with minor (14 cases), moderate (1 case), and severe features (8 cases) but mostly complete recovery. In 8 patients with severe symptoms consequential damage could not be excluded and in 6 patients IIME resulted in death.

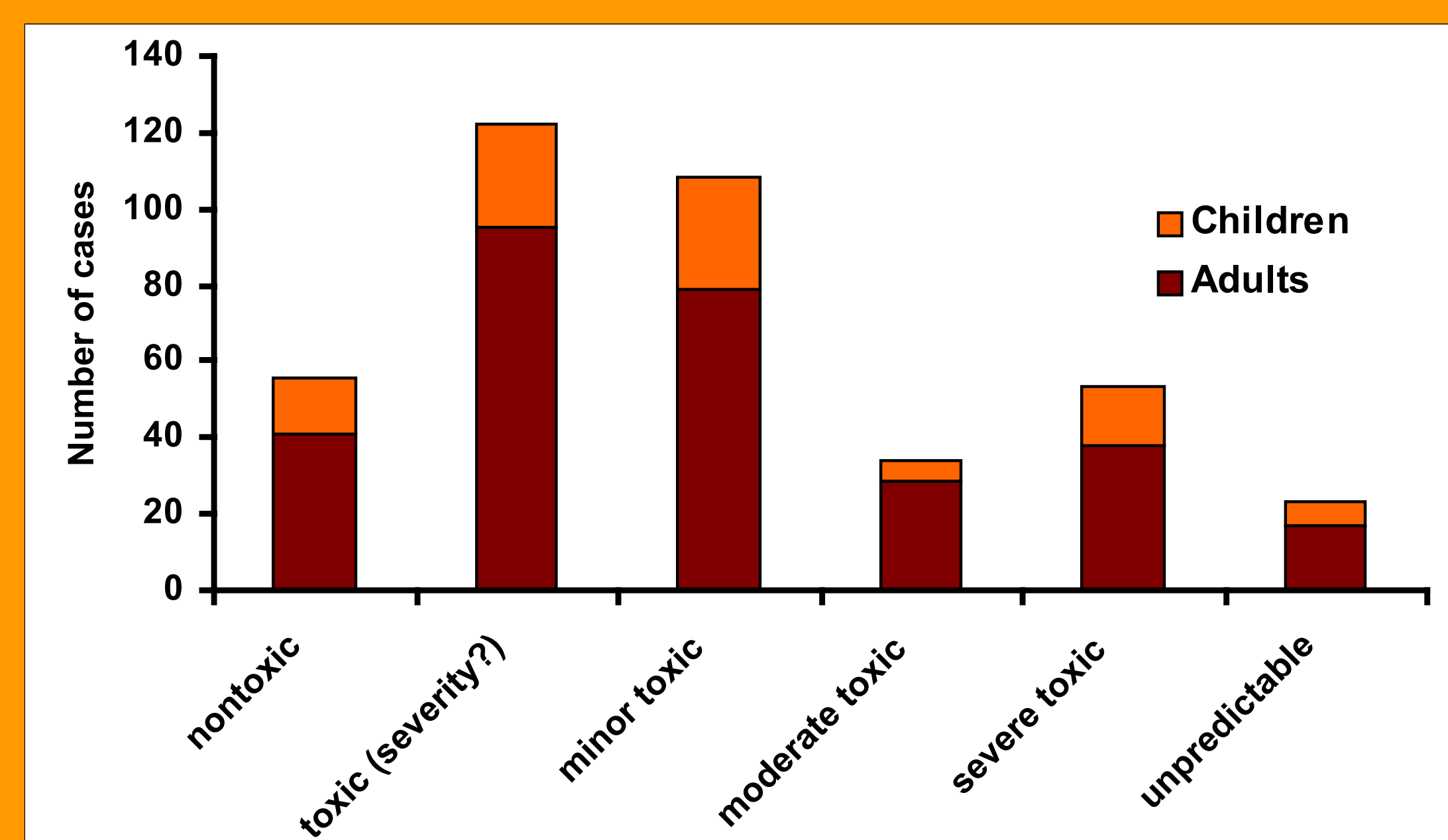


Figure 5: Estimated risk of toxicity caused by medication error

Conclusion

Although the proportion of IIME (0.1% of all calls) was low the incidence of severe symptoms in IIME followed to a known outcome was high (31%). Therefore, especial care should be taken in intravenous medication.

References: 1. Deters M, Prasa D, Schaper A, et al. Iatrogenic Intravenous Medication Errors Reported to the PIC Erfurt. Clin Toxicol 2008; in press.