

Objective

Poison information centres are contacted not only by medical care facilities in case of an intoxicated patient, but also frequently when medication errors occur in those facilities themselves. The aim of the study was to show how often medication errors still happened in medical care facilities. Furthermore, the cause of these medication error and potential risk should be demonstrated.

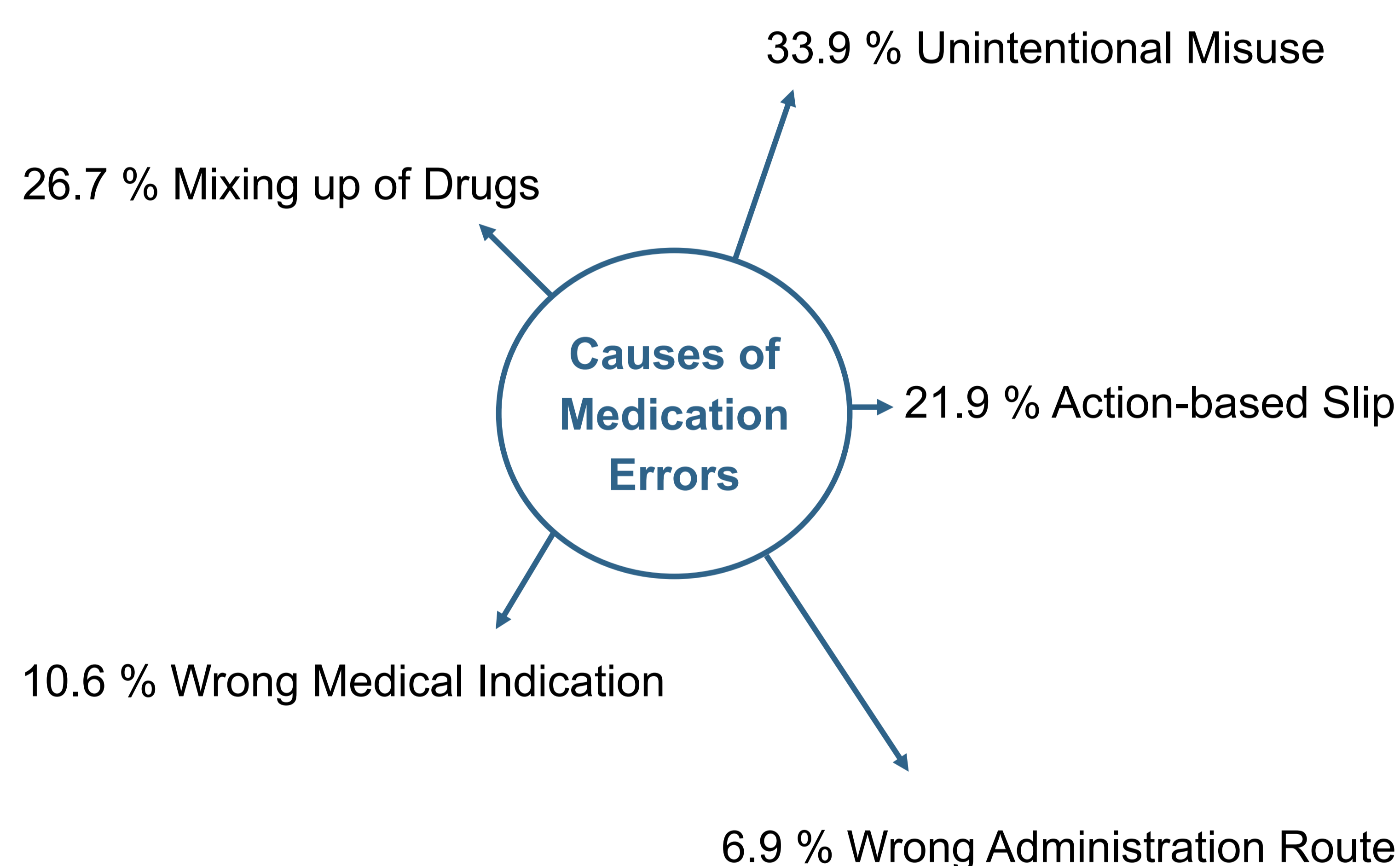
Method

In a retrospective study, we identified and analysed medication errors caused by personnel in medical care facilities between 2013 and 2020. Data were categorized into cause of medication errors, drugs involved, and estimated potential risk of toxicity to assess the potential harm to the patient.

Results

Characteristics of Medication Errors

In total, 1,242 cases of medication errors were identified in medical care facilities during the study time (0.8 % of all exposures). We registered an increase of 57.7 % from 2013 to 2020. Causes for medication errors are shown below:



Estimated Risk of Toxicity

The medication errors led to a minor estimated risk of toxicity in 34.9 %; moderate and severe risk was predicted in 10.0 % and 8.0 %, respectively. In 38.4 % the risk was unpredictable, whereas just in 8.7 % of the cases no adverse effects were expected.

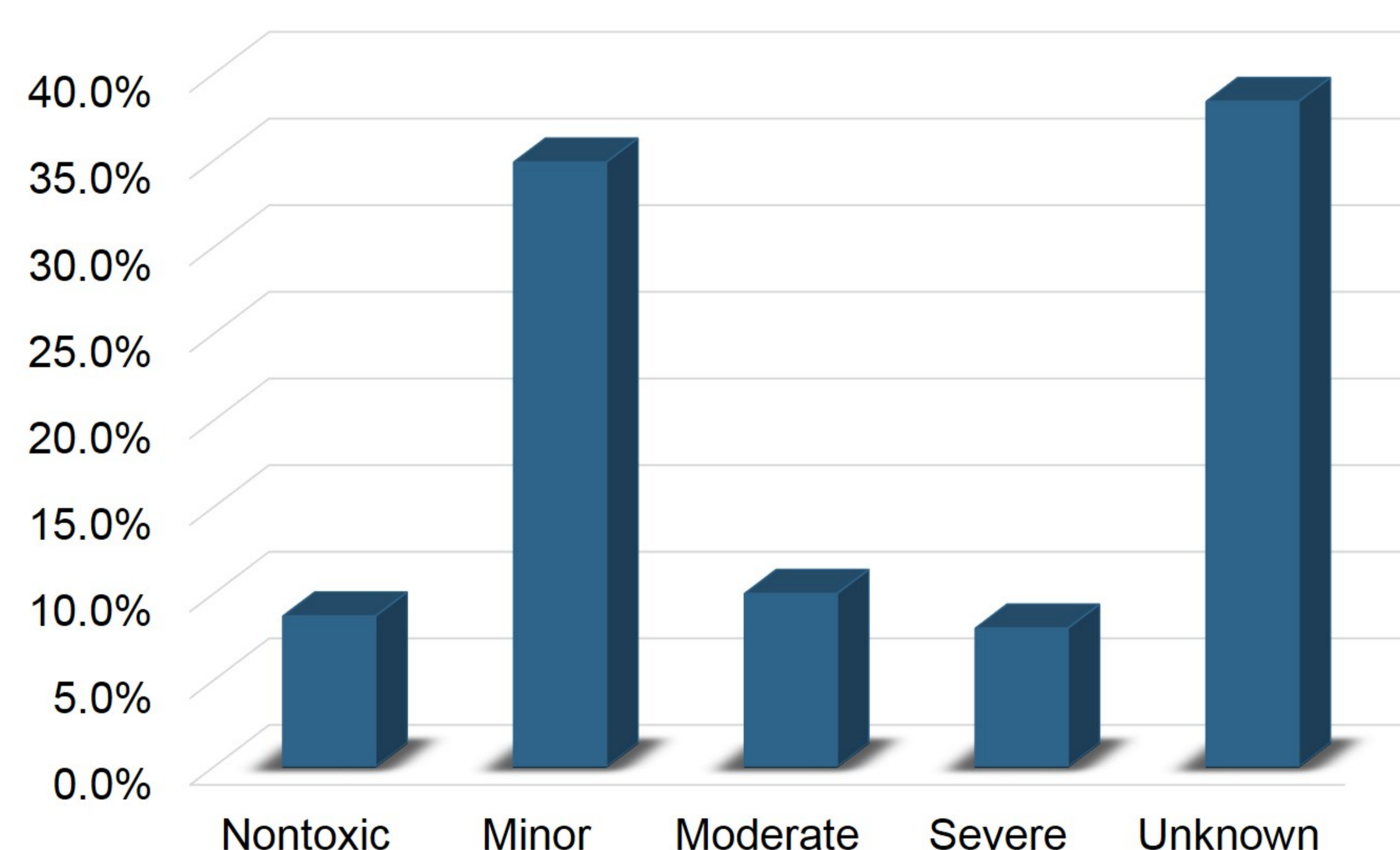


Figure 1: Estimated risk of toxicity by iatrogenic medication errors according to Poisoning Severity Score [1]

Drugs Involved in the Medication Errors

Most frequent drug classes involved were antipsychotics (19.6 %), antiepileptics (10.8 %), and antidepressants (6.1 %). Quetiapine, clozapine, acetaminophen, and valproic acid were the most common drugs involved. Methotrexate and baclofen were most often associated with an estimated potential risk for severe toxicity.

References

- Persson H, Sjöberg GK, Haines JA, Pronczuk de Garbino J (1998): Poisoning Severity Score. Grading of Acute Poisoning. J Toxicol Clin Toxicol 36, 205-213
- European Medicines Agency. New measures to avoid potentially fatal dosing errors with methotrexate for inflammatory diseases. EMA/587673/2019. 21 October 2019. Available from: <https://www.ema.europa.eu/en/medicines/human/referrals/methotrexate-containing-medicinal-products>
Accessed date: 09 October 2022

Conclusion

The study shows that medication errors in medical care facilities are a persistent problem and should be analysed continuously for patient safety. Incorrect dosing is often a cause, which poses a potential risk, especially for drugs with a narrow therapeutic range. In particular, in methotrexate incorrect dosing (daily instead of weekly dose) occurs again and again despite numerous risk assessments and warnings [2]. To avoid medication errors, the personnel in medical care facilities should receive regular training on medications in general. In addition, the medication dispensing process should always be questioned and optimized.