IMPACT OF A COMPUTERISED PHYSICIAN ORDER ENTRY SYSTEM ON MEDICATION SAFETY IN PAEDIATRICS

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Background One of the most critical steps in the medication process on paediatric wards is the drug prescription. Studies have shown that the use of electronic systems may improve the quality of prescribing and reduces medication errors in paediatric inpatients.

This study aims to investigate the impact of a computerised physician order entry (CPOE) system (incl. decision support for dosing) on adverse drug reactions (ADR) and medication errors (ME) in comparison to paper-based prescribing and documentation.

Methods A prospective pre-post study was conducted at a general paediatric ward. All patients aged 17 years or younger that were treated for at least 24 hours during the study periods (5 months pre and post implementation) were observed. Adverse events were identified by intensive chart review.

The primary outcome measure was the incidence of clinically relevant ADRs and MEs. Events were assessed regarding causality (WHO), severity (WHO and additionally Dean & Barber for MEs) and preventability (Shumock).

Results 338 patients with medication were included in the paper-based prescribing cohort (phase I) and 320 patients with medication in the electronic prescribing cohort (phase II). Median age was 7 (IQR 2 - 14) and 6 (IQR 1 - 13), respectively. In each cohort patients received a median number of 4 different drugs.

Potentially harmful MEs were less often observed in the cohort with electronic prescribing (n=231 vs. n=549). The mean number per patient significantly decreased from 1.62 to 0.72 (p< 0.05).

During the hospitalisation 2.1% (n=7) patients in phase I and 2.8% (n=9) in phase II experienced clinically relevant ADRs whereof two (0.6%) in each cohort originated from MEs.

Conclusion The implementation of a CPOE system significantly reduces medication errors, particularly those potentially harming patients but has less impact on ADRs.

REFERENCES

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