

### 31 THE IMPACT OF PAEDIATRIC DOSE RANGE CHECKING SOFTWARE

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Dosing errors can cause significant harm in paediatric healthcare settings.

Our objective was to investigate the effects of paediatric dose range checking (DRC) clinical decision support (CDS) software on overdosing-related outcomes.

A before-after study and a semi-structured survey of prescribers was conducted across inpatient wards (excluding intensive care) in a regional children's hospital. DRC CDS software linked to a paediatric drug formulary was integrated into an existing electronic prescribing system.

The main outcome measures were; the proportion of prescriptions with overdosing errors; overdosing-related clinical incidents; severity of clinical incidents; and acceptability of the intervention.

The prescription overdosing error rate did not change significantly following the introduction of DRC CDS software: in the pre-intervention period 12/847 (1.4%) prescriptions resulted in prescription errors and in the post-intervention period there were 9/684 (1.3%) prescription overdosing errors (n=21, Pearson  $\chi^2$  value=0.028, p=0.868).

However, there was a significant trend towards a reduction in the severity of harm associated with reported overdosing incidents (n=60, Mann-Whitney U value=301.0, p=0.012).

Prescribers reported that the intervention was beneficial and they were also able to identify factors that may have contributed to the persistence of overdosing errors.

DRC CDS software did not reduce the incidence of prescription overdosing errors in a paediatric hospital setting but the level of harm associated with the overdosing errors may have been reduced. Use of the software seemed to be safe and it was perceived to be beneficial by prescribers.

### 32 RAPID DROP IN MIDAZOLAM CONCENTRATION MAY BE LINKED TO PAEDIATRIC DELIRIUM IN CRITICALLY ILL CHILDREN – AN OBSERVATIONAL PILOT STUDY

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**Introduction** We sought to detect a relationship between midazolam concentration and development of new delirium in critically ill children who were on continuous midazolam administration.

**Methods** Delirium was detected using the Sophia Observation withdrawal Symptoms - Paediatric Delirium (SOS-PD) score and 104 left-over samples were available to measure midazolam concentrations.

**Results** Twenty-five percent of the included patients developed new delirium. Median cumulative midazolam dose was higher in patients who developed delirium compared to those

without delirium but lower compared with the day preceding delirium detection, indicative of a rapid decline. Similar findings were made when active metabolites 1-hydroxymidazolam and 1-hydroxymidazolam glucuronide were considered.

**Conclusions** A sudden and significant reduction in midazolam concentration may contribute to the development of a delirium in critically ill children.

### 33 OFF-LABEL USE OF DRUGS IN PAEDIATRIC (SPECIALISED) OUTPATIENT CLINICS – WHAT HAS CHANGED BETWEEN 2009 AND 2019?

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**Introduction** Off-label use is still inevitable for paediatric drug treatment. The aim of this study was to analyse the licensing status of drug prescriptions in German paediatric (specialised) outpatient clinics and to determine changes over a 10-year time course.

**Methods** Cross-sectional, retrospective, monocentric studies were conducted in 2009 and 2019 to assess drug prescriptions regarding their licensing status in 10 (one general and nine specialised) outpatient clinics in Germany. Prevalence and relative frequency of off-label prescriptions were calculated, reasons for off-label prescribing analysed and logistic regression performed to determine influencing factors.

**Results** 751 prescriptions of 296 patients in 2009 and 1438 prescriptions of 786 patients in 2019 were examined and classified according to their licensing status. Relative frequency of off-label prescriptions was around 45% without significant change over that decade. Prevalence of off-label prescriptions was 60.1% in 2009 and 53.1% in 2019 and therefore significantly higher in 2009 (p=0.037). The number of prescriptions per patient was significantly higher in 2009 ( $2.5 \pm 2.3$  vs.  $1.8 \pm 1.5$ , p<0.000), too. Comparison revealed the same high-ranking reasons in every study: off-label use due to indication, overdosing and missing paediatric information.

**Conclusions** Off-label prescribing still plays an important role in clinical daily routine in paediatrics. Despite numerous regulatory efforts and incentives, no substantial reduction in off-label prescribing could be determined since 2009. Further efforts are needed to generate more evidence-based knowledge about paediatric pharmacotherapy and to treat children as best as possible.

### 34 ATTITUDES OF CHILDREN AND YOUNG PEOPLE AND THEIR PARENTS TOWARDS POLYPHARMACY – PILOT STUDY

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**Introduction** A recent survey of healthcare professionals found that healthcare professionals concerns about patient and family anxiety was the main barrier to deprescribing. However, the