

ABSTRACT

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Title of the master thesis: The analysis of drug-drug interactions in patients admitted to hospital (I.)

The presence of potential drug-drug interactions (DDIs) is common in daily practice and only a small proportion of potential DDIs results in hospitalization of the patients. Nevertheless, DDIs represent a significant cause of hospital admissions.

This study aims to identify DDIs in the medication history of the patients admitted to University Hospital Hradec Králové via the emergency department in August-November 2018. The objectives of this study are a) to determine the prevalence of potential DDIs; b) to categorize identified potential DDIs with respect to their mechanism, severity, risk rating, level of documentation and potential outcomes and c) to determine the prevalence of manifest DDIs.

This study has a cross-sectional design. The following data were obtained retrospectively from electronic medical records: demographic data, medication history, past medical history, laboratory and clinical findings, and information about hospital admission. The identification of potential DDI was performed using Micromedex, Lexicomp (via UpToDate) and DrugAgency a.s., database of DDIs. Potential DDI was defined as DDI with at least a moderate severity category in at least one drug interaction database. The causality assessment was performed using the Drug Interaction Probability Scale (DIPS). Manifest DDI that contributed to the hospital admission was defined as a DDI with clinical manifestation related to the main or contributory reason of hospital admission with a DIPS score of at least 2 points.

A sample of 375 hospital admissions was analyzed, of which 75 were excluded from the process of identifying potential DDI due to an insufficient number of medications in medication history (< 2). 2258 potential DDI were identified in 258 hospitalizations. The overall prevalence of hospital admissions with identified potential DDI in medication history was 68.8% (95% CI: 64.1–73.5). 866 different DDIs were involved in these potential DDIs. Manifested DDIs which contributed to hospital admission were identified in 17 (4.5%) hospital admissions.

These results indicate that more than half of patients have at least one DDI in medication history. Adverse drug events accounted for more than 4% of hospital admission, and therefore research on DDI-related hospital admissions deserves more attention.

Key words: drug-drug interaction, hospitalization, cross-sectional study