Abstract

Drug Information Centre service analysis IV. – drug interactions

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Introduction: Drug information centre (DIC) of the Faculty of Pharmacy in Hradec Králové, Charles University, and University Hospital Hradec Králové was established in 1994. It provides drug information to healthcare professionals in the form of timely and accurate answers to drug-related enquiries, including drug interactions (DI).

Aim: This study aimed to analyse enquiries related to DI processed by DIC from 2015 to 2020 and to solve three drug enquiries related to drug interactions.

Methods: Quantitative and qualitative analysis of drug enquiries was carried out. Data was collected from individual enquiries related, but not limited to drug-drug, drug-herbal, and drug-disease interactions. The quantitative analysis based on descriptive statistical methods was performed on two levels: enquiry level and drug interaction level. On the enquiry level, ATC codes found in the enquiries were analysed and on the drug interaction level various parameters assigned to each DI were analysed, such as interacting components, mechanism of interaction, clinical severity, potential clinical outcome or interacting CYP450 isoform. The qualitative analysis was based on comparing enquiries which concerned the same drug interaction and carrying out their model solution.

Results: In total, 67 enquiries related to drug interactions were identified, which contained 153 drug interactions. The most common enquirers were pharmacists and hospital physicians. The most used sources were SmPC (59 enquiries), PubMed/Medline (49) and Micromedex (48). In the first level of the ATC codes analysis, the most common codes were C (cardiovascular system), and the most frequently interacting code was N (nervous system). The most frequently interacting components were omeprazole, warfarin, furosemide, and levothyroxine. The mechanism of interactions was in the majority (93; 60.8%) pharmacodynamic. The most common clinical severity of interactions was grade B (moderate;

102; 66.7%), followed by grade A (minor; 37; 24.2%) and grade C (severe; 14; 9.2%). The most frequent potential clinical outcomes of interactions were risk of adverse effects and risk of therapy failure. Five enquiries with the common theme of beta blockers and antidiabetics interaction and two enquiries with the theme of proton pump inhibitors and clopidogrel interaction were compared and a model solution was carried out.

Conclusion: A broad spectrum of enquiries related to drug interactions was analysed and interacting components of drug interactions were identified. Although the enquiries were complex, their solutions did not majorly differ within the frame of their context.