Drug-Drug Interaction Associated with Mold-Active Triazoles among Hospitalized Patients

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Antimicrob Agents Chemother 2016;60:3398–3406. doi:10.1128/AAC.00054-16.

ABSTRACT

The majority of hospitalized patients receiving mold-active triazoles are at risk of drug-drug interactions (DDIs). Efforts are needed to increase awareness of DDIs that pose a serious risk of adverse events. Triazoles remain the most commonly utilized antifungals. Recent developments have included the mold-active triazoles (MATs) itraconazole, voriconazole, and posaconazole, which are first-line agents for the treatment of filamentous fungal infections but have the potential for DDIs. This objective of this study was to evaluate the prevalence of triazole DDIs.

Hospitalized U.S. adults with MAT use were identified in the Cerner HealthFacts database, which contained data from over 150 hospitals (2005 to 2013). The severities of DDIs with MATs were categorized, using drug labels and the drug information from the Drugdex system (Thompson Micromedex), into four groups (contraindicated, major, moderate, and minor severity). DDIs of minor severity were not counted. A DDI event was considered to have occurred if the following two conditions were met: (i) the patient used at least one drug with a classification of at least a moderate interaction with the MAT during the hospitalization and (ii) there was a period of overlap between the administration of the MAT and that of the interacting drug of at least 1 day. A total of 6,962 hospitalizations with MAT use were identified. Among them, 88% of hospitalizations with voriconazole use, 86% of hospitalizations with itraconazole use, and 93% of hospitalizations with posaconazole use included the use of a concomitant interacting drug. A total of 68% of hospitalizations with posaconazole use, 34% of hospitalizations with itraconazole use, and 20% of hospitalizations with voriconazole use included the use of at least one drug with a DDI of contraindicated severity. A total of 83% of hospitalizations with posaconazole use, 61% of hospitalizations with itraconazole use, and 82% of hospitalizations with voriconazole use included the use of at least one drug that resulted in a severe DDI.

The findings of this study demonstrate that a majority of hospitalized patients receiving MAT are at risk for severe drug-drug interactions and highlight the need for antifungal stewardship.