Drug-drug interactions – who cares?

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Introduction

Clinical use of a drug-drug interaction (DDI) check implemented in the electronic patient chart of the University Hospital Zurich was monitored.

Materials and Methods

Health professionals can actively check for DDIs either during computerised physician order entry (CPOE) or while reviewing a patient chart. These checks were logged during treatment of 30,328 patients over a 12 months period, including a total of 681,136 drug prescriptions with CPOE. The impact of DDI checking was also evaluated in one medical clinic by a pharmacist while visiting 426 patients on rounds.

Results

A total number of 437 users checked for DDIs at least once, including 431 prescribing physicians (7.1 checks per resident and 3.5 checks per senior physician). However, most frequent users were six consulting pharmacologists (537 checks per consultant) not personally in charge of prescribing medication.

Thus, total use of the checking tool was higher by consultants (54%) compared to prescribers (internists 23%, surgeons 9%, other clinicians 14%). Highest hit ratio (2.3 DDIs detected per check) was found in general internal medicine, and in no other clinic did more prescribers check for DDIs (72% of the physicians). Lowest hit ratio (0.5) was observed in surgery. Surgical patients were less often screened for DDIs (0.6–5.9%, depending on specialty) compared to other patients (6.3–45.7%).

On an average DDI checking was performed 496 times per month (revealing 742 DDIs/month). The number of users significantly increased over time, and also the frequency of use by prescribing physicians and by consultants (p<0.01). Pharmacological issues were addressed in 283 of 426 patients visited on medical rounds, including 58 cases with potentially important DDIs. In 38 of these cases (66%) therapeutic consequences were drawn immediately, including change of medication, time-displaced administration and intensified monitoring.

Conclusion

DDI checks were requested more often by consultants than by prescribing physicians. The majority of important DDI messages induced therapeutic actions by prescribers in order to improve patient safety. Considering the risk of alert fatigue, clinical studies have to show whether automatically triggered alerts would be more effective.

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