Drug-Drug Interaction Alerts

The Problem
HCA QI case review revealed a possible drug-drug interaction of flecainide and sertraline for which there was no alert in the online medical record (OMR).

- Symptomatic ventricular tachycardia developed within five days of starting sertraline against backdrop of ongoing flecainide use. When the physician prescribed sertraline for this patient, who was already taking flecainide, no drug-drug interaction alert appeared in OMR prescribing system
- The prescribing physician specifically selected sertraline for this patient in order to avoid known arrhythmia risk associated with other antidepressants, such as citalopram.
- Similarly, a retail pharmacist filling the prescription was also not alerted of a potential drug-drug interaction between flecainide and sertraline
- Drug information software programs are known to vary in identification of drug interactions, yet prescribers and pharmacists depend on these alerts

Aim/Goal
To alert prescribers of a significant drug-drug interaction between flecainide and sertraline, and to prevent related adverse events.

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The Interventions
- Reviewed multiple commercially available pharmacy databases, as well as individual product prescribing information regarding evidence of drug-drug interaction
- Drug-drug interaction and supporting documentation submitted to BIDMC’s vended drug information database team for review.
- Alert designed by drug information database team to display this interaction in OMR.
- Conducted literature review regarding variability of available information regarding drug-drug interactions across different drug information databases.

The Results/Progress to Date
- Drug-drug interaction alert now displayed to providers in OMR
- Drug information vendor reviewed information and included this drug-drug interaction in their system within 15 days
- Case report submitted to Food and Drug Administration
- Literature review revealed several studies evaluating commonly used drug-drug interaction (DDI) screening programs which suggest that only 2.2-11% of DDIs are identified consistently across all programs and no individual program found more than 50% of the total number of DDIs.¹ ²

Lessons Learned
- The commercial vendor was responsive to our review and added the interaction to its system within 15 days, demonstrating good faith in improving their product based on user experience.
- Timely reporting to our drug information vendor of drug interactions not currently triggering an alert in our prescribing software is critical. Our drug information software vendor relies on feedback and necessary updates can be made timely.
- Drug information software programs vary widely in reporting of drug interactions which suggests that using a combination of two or more programs may provide better information about the drug interaction.

Next Steps
- Reinforce the importance of timely reporting of any drug-drug interaction that does not currently trigger an alert in our prescribing software
- Evaluate potential gaps in our system and explore opportunities to enhance available information and alerts.


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