Managing Adverse Drug Interactions

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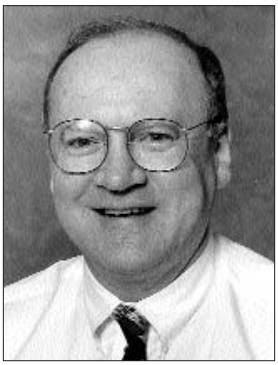
The prevention and detection of adverse drug interactions (referred to hereafter as drug interactions) has always been a major responsibility of pharmacists, whether they are using the pharmaceutical care model of practice or are practising more traditional "clinical pharmacy" methods. However, the management or resolution of *potential* drug interactions is an important aspect of this process that I think is generally ignored. In fact, several recent studies have shown that the detection of drug interactions by pharmacists, and thus the prevention of adverse events, has even fallen well below acceptable practice standards.[1,2]

Why should this be, given the availability of computerized drug-interaction warnings? The reasons are probably multifactorial and range from sporadic oversight to misinterpretation of the likelihood and clinical relevance of the interaction. In addition, practitioners must be aware that drug-interaction warning systems and texts cannot be kept current:[3] it may take several months or more for a "new" interaction to be included in these practice aids. Knowledge of the mechanism or mechanisms of how a drug interacts with other compounds may assist in predicting and preventing interactions that do not yet appear in drug-interaction tables. For instance, the characterization of the specific cytochrome P450 metabolic pathway for an increasing number of drugs should aid in the prevention of many clinically relevant, but as-yet-unreported, drug interactions;[4] however, conscious attention and ability to extrapolate this information to new combinations of drugs are required.

A pharmacist's response to a potential drug interaction requires some planning so that a strategy for resolution of the interaction can be discussed with the physician or the patient; too often the responsibility for resolution is shifted back to the prescriber or left for the patient to ponder. Pharmacists should be taking more definite action to provide solutions, that is, actually managing the interactions rather than just informing others of the potential problems. Some interactions can be dealt with by discussing the resolution directly with the patient; for example, certain drug interactions based on adsorption or chelation of one drug by another can be prevented simply by having the patient separate the administration time of the 2 drugs.[4] In the case of the iron–thyroxine interaction, however, the appropriate first step may be confirmation, through discussions with the patient or the physician, of the continued need for the iron preparation. The most appropriate solution in a given case will depend upon the relative importance of each drug to the patient's conditions, whether the patient is under constant observation in a hospital or is at home, and whether monitoring tests (such as international normalized ratio [INR]) or the warning signs of specific early symptoms of toxicity are adequate to prevent serious consequences. Certain drugs, such as lovastatin and cisapride, for example, can be discontinued temporarily without serious harm to the patient while a 7-day course of an interacting antibiotic is given.[5,6] Most drugs can be given in combination with warfarin as long as the INR is monitored more frequently during the first week of administration of the new drug.



Weideman and colleagues[2] have stated that "pharmacists must be diligent in reviewing and evaluating interaction warnings while keeping abreast of serious drug interactions and anticipating potential interactions not yet identified". In addition, we must take a more active role in providing appropriate solutions to each suspected drug interaction. Undergraduate curricula

and continuing education programs that address the topic of drug interactions should incorporate principles for managing drug interactions into the learning objectives and use examples to teach application of these principles.

References

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