Protecting Our Elderly Patients from Adverse Drug Reactions

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Experience with pharmaceutical care and findings in the literature have demonstrated that older patients are at greater risk for adverse drug reactions (ADRs) than are younger populations. In this issue, Mihajlovic and others[1] add to this knowledge through a systematic review of patient characteristics that appear to place individual patients at risk for ADRs. Their intent was to assist pharmacists in identifying those patients at higher risk for an ADR within a general population receiving care from individual pharmacists, and therefore, to more efficiently direct the pharmacists' activities to where they potentially will have greater benefit. So how do we now use this information when triaging a large case load?

Over the past 5 years, several investigator groups have attempted to create, validate, and implement screening mechanisms to identify the elderly patients most likely to benefit from interventions to reduce the risk of ADRs. The most widely recognized strategy uses the Beers criteria, a listing of drugs that carry a high risk of being inappropriate for elderly patients.[2] As one example, Quebec-based pharmacists demonstrated that a computerized review of individual patients' health care records using selected Beers criteria could identify patients for whom inappropriate medications had been prescribed.[3] In that study, computerization of patient screening allowed the pharmacists to efficiently identify patients at risk of ADRs and intervene to adjust their therapy.

Pharmacists practising in emergency departments have been shown to reduce the prescribing of inappropriate therapies, as defined by the Beers criteria, by educating prescribers, by developing notices for patient–drug combinations to be avoided that can be implemented via computerized prescriber order entry, and by giving feedback to prescribers on their performance.[4] These steps could be thought of as similar to the feedback and intervention techniques employed by antimicrobial stewardship programs. Previously in the *Canadian Journal of Hospital Pharmacy*, Slaney and others[5] showed that application of the Beers criteria identified elderly patients needing an alternate level of care (long-term care) who subsequently experienced an ADR. These results suggest that screening elderly patients for prescribing of inappropriate medications, as defined by the Beers criteria, would assist the pharmacist in triaging to ensure that those in most need receive attention.

Other investigators have used the evidence-based STOPP/START (Screening Tool of Older Person's Prescriptions/ Screening Tool to Alert doctors to Right Treatment) criteria to identify patients needing evaluation of their drug therapy.[6] These tools list 81 specific drug–disease–patient scenarios that should lead to consideration of discontinuation of prescribed therapy, and 34 drug–disease–patient scenarios where drug therapy should be initiated. Although this may sound like a complex and laborious process, all of the recommended scenarios are easily understandable and identifiable by practising pharmacists. Application of the STOPP/START screening criteria has been shown to improve the appropriateness of prescribing[7] and reduce subsequent drug-related readmissions.[8] Investigators in Nova Scotia found that the STOPP/START screening tools were potentially more effective than the Beers criteria in identifying drug therapy that would put elderly patients at risk for an ADR, and their use may have measurable benefits in terms of subsequent patient well-being and health resource utilization.[9,10]

Other researchers have shown that pharmacists can improve prescribing[11] and reduce subsequent ADRs[12] when they use a structured approach to identifying and interviewing patients with a view to assessing their drug therapy. In these studies, the pharmacists were assisted by computerized decision support software that utilized the assessment tools described above, evaluation of current laboratory data, and reconciliation of the patients' past and current therapy. They found that application of this method prevented 1 ADR for every 14 patients assessed.[12] Use of a frailty index to identify those elderly individuals at greatest risk for ADRs may further assist the pharmacist in the triage process.[13] A simple assessment score based on only 5 clinical variables (> 8 medications, hyperlipidemia, elevated white blood cell count, use

of antidiabetic agents, and hospital length of stay > 12 days) has been validated for predicting which of the very old (i.e., > 80 years of age) are likely to experience an ADR.[14]

Research showing that our elderly patients are at heightened risk for ADRs, including the study by Mihajlovic and others,[1] coupled with the proven benefit of the screening and intervention techniques described above, should encourage all Canadian institutional pharmacists to implement methods for identifying these vulnerable patients and then to intervene. Individual pharmacists and, particularly, clinical pharmacy administrators should look at the organization of their pharmaceutical care programs or services to determine how screening techniques could be used to identify those elderly patients with greater need for pharmacists' attention than the general population. Utilization of computer resources, including distribution systems, patient information systems, and electronic health care records, to efficiently screen for patients on the basis of proven beneficial criteria would have the greatest impact at the lowest cost in terms of pharmacists' time. Our elderly patients need this care . . . it's time to act!

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Competing interests: None declared.

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