Patient Safety Tip of the Week

March 4, 2014

Evidence-Based Prescribing and Deprescribing in the Elderly

In our January 28, 2014 Patient Safety Tip of the Week "Is Polypharmacy Always Bad?" we discussed the need to consider polypharmacy in the context of the number of comorbidities a patient has. And we pointed out that some of the adverse consequences traditionally associated with polypharmacy may actually be the result of underprescribing! So we said what we really need to strive for is "eupharmacy", where patients are treated with medications based upon the medical evidence base.

But one of the problems we have in dealing with the elderly is that the evidence base is limited. Particularly for patients age 80 and older there is often a paucity of evidence because such patients are often excluded from randomized controlled trials. For some preventive medications that absolute risk reduction may be much different at age 80 than it is at age 50 or 60.

So a provocative recent perspective in the journal Evidence-Based Medicine (Byatt 2014) is very timely in that respect. The author looked at the evidence base for medications used to prevent stroke in patients over 80 and noted that by this age hypertension may no longer be an attributable risk factor for stroke. Similarly, the use of statins in this age group has only marginal reduction in stroke risk and modest reduction in overall cardiovascular events.

Byatt notes that the NNT (number needed to treat) with antihypertensives for 2 years to prevent one stroke is 94 and the NNT to prevent nonfatal strokes even higher. For statins, treatment in the elderly reduces the risk of a composite of all strokes or cardiac events but not strokes alone.

The numbers noted by Byatt for antihypertensive therapy come from the HYVET (Hypertension in the Very Elderly Trial) study (Beckett 2008). That study did show that treatment of hypertension in patients age 80 and older resulted in a 30% reduction in the rate of fatal or nonfatal stroke and a 39% reduction in the rate of death from stroke. Also, in contrast to several other studies, it demonstrated a reduction in the rate of death from

any cause (21% reduction). But overall the study population in HYVET was relatively healthy. Only 11.8% had a history of cardiovascular disease. So it is very difficult to extrapolate the beneficial effects noted in HYVET to the frail elderly.

For many years we have said that the benefits of statin use are actually more pronounced in the very elderly. But that is where we need to make a distinction between primary and secondary prevention. They may be beneficial in a patient who has already had a cardiovascular event but may have a much more limited benefit when used as primary prevention at this age.

At the same time the Byatt perspective came out another study (Tinetti 2014) was published looking at the impact of antihypertensive therapy on serious fall-related injuries in the elderly. They looked at a nationally representative sample of community-dwelling Medicare patients older than 70, most of whom had multiple comorbidities and were therefore representative of the real world as opposed to the relatively healthy patients in randomized controlled trials. Compared to patients on no antihypertensive medications those with moderate-intensity antihypertensive therapy were 40% more likely to have a serious fall-related injury and those on high-intensity antihypertensive therapy 28% more likely to have a serious fall-related injury. Also, those with a history of a prior fall injury were over twice as likely to suffer a fall-related serious injury. The authors chose serious fall-related injuries (hip fractures, other serious fractures, head injuries, etc.) because the consequences of these are comparable to the consequences of the conditions they are being used to prevent (eg. stroke, cardiovascular conditions).

The Tinetti paper is another reminder that in the real world we need to balance the potential risks against the potential benefits when we consider treatment of various risk factors. What works well in relatively healthy subjects seen in randomized controlled trials may not have the same risk:benefit ratio seen in elderly patients with multiple chronic conditions.

Patients such as those in the Byatt and Tinetti papers are not likely first starting their medications in their 70's and 80's. In most cases they have likely been on them for many years. Sometimes it is difficult to ascertain who originally prescribed the medication and why. So the real question is "when should we consider stopping medications?" and the next question is "how do we go about stopping them?".

Fortunately, some good work has already been done addressing the issue of deprescribing in the elderly. Ian Scott and colleagues (Scott 2012) developed a 10 step conceptual framework for minimizing inappropriate medications in older populations and deprescribing (if you don't have full access to that journal you can read an interview with Dr. Scott (Brookes 2013) in Medscape):

1. Ascertain all current medications
2. Identify patients at high risk for or experiencing ADR's
3. Estimate life expectancy in high-risk patients
4. Define overall care goals in the context of life expectancy
5. Define and confirm current indications for ongoing treatment

6. Determine the time until benefit for disease-modifying medications
7. Estimate the magnitude of benefit vs. harm in relation to each medication
8. Review the relative utility of different drugs
9. Identify drugs that may be discontinued
10. Implement and monitor a drug minimization plan, with ongoing reappraisal of drug utility and patient adherence by a single nominated clinician

Deprescribing can be very time-consuming and often requires coordination with many other providers. Scott suggests only deprescribing one medication at a time. Another article on deprescribing in elderly nursing home patients (Liu 2014) also notes you need to observe patients for withdrawal syndromes or discontinuation syndromes when certain medications are tapered or discontinued.

We've noted in many of our columns that when we do medication reviews on elderly patients we almost always identify at least 1-2 medications that might be discontinued. In some cases there may be therapeutic duplication. In others it may be a potentially inappropriate medication from Beers' list or the STOPP list. Those instances are actually the easy ones in which we can begin deprescribing. The tougher ones are those in which the patient is on a preventive medication. That's when we must determine the patient's real risk of developing the condition within his/her expected lifespan and whether the evidence is there to suggest the medication truly prevents that condition at this age. We then need to consider the potential adverse effects that medication might have and do an individualized risk:benefit analysis for that patient. We find most patients are willing to consider deprescribing when you have this sort of informed conversation with them. They (and more often the provider) may fear that stoppage of that medication will result in the condition they were trying to avoid. You do have to let them know that is a possibility but when you weigh the potential harms against the potential benefit (using terms they can understand, not statistical terms like "relative risk reduction"!) most are willing to consider coming off even a preventive medication.

So the bottom line: don't just consider medications as potentially inappropriate if they are on Beers' list or the STOPP list. Consider all medications as potentially inappropriate in the very elderly and do the sort of analyses noted above to determine whether deprescribing may be an option for your individual patient.

Some of our past columns on Beers' List and Inappropriate Prescribing in the Elderly:

Patient Safety Tips of the Week:

- January 15, 2008 "Managing Dangerous Medications in the Elderly
- October 19, 2010 "Optimizing Medications in the Elderly"
- September 22, 2009 "Psychotropic Drugs and Falls in the SNF"
- June 21, 2011 "STOPP Using Beers' List?"
- May 7, 2013 "Drug Errors in the Home"

- January 28, 2014 "Is Polypharmacy Always Bad?"

What's New in the Patient Safety World columns:

- June 2008 "Potentially Inappropriate Medication Use in Elderly Hospitalized Patients"
- September 2010 "Beers List and CPOE"
- December 2011 "Beers' Criteria Update in the Works"
- November 2013 "More on Inappropriate Meds in the Elderly"

References:

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Beckett NS, Peters R, Fletcher AE, et al. for the HYVET Study Group. Treatment of Hypertension in Patients 80 Years of Age or Older. N Engl J Med 2008; 358: 1887-1898 http://www.nejm.org/doi/full/10.1056/NEJMoa0801369

Tinetti ME, Han L, Lee DSH, et al. Antihypertensive Medications and Serious Fall Injuries in a Nationally Representative Sample of Older Adults. JAMA Intern Med 2014; Published online February 24, 2014 http://archinte.jamanetwork.com/article.aspx?articleid=1832197

Scott IA, Gray LC, Martin JH, Mitchell CA. Minimizing inappropriate medications in older populations: a 10 step conceptual framework. Am J Med 2012; 125: 529–537 http://www.amjmed.com/article/S0002-9343%2811%2900901-6/abstract

Brookes L, Scott IA. Deprescribing in Clinical Practice: Reducing Polypharmacy in Older Patients. An Expert Interview With Ian A. Scott, MBBS, FRACP, MHA Medscape Internal Medicine. November 26, 2013 http://www.medscape.com/viewarticle/814861

Liu LM. Deprescribing: An Approach to Reducing Polypharmacy in Nursing Home Residents. Journal for Nurse Practitioners 2014; 10(2): 136-139 http://www.npjournal.org/article/S1555-4155%2813%2900590-4/abstract

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