Teachable Moment

Polypharmacy in the Elderly—When Good Drugs Lead to Bad Outcomes

A Teachable Moment

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Story From the Front Lines

An 83-year-old woman with a history of atrial fibrillation and congestive heart failure was admitted to the hospital after presenting with lightheadedness and palpitations secondary to atrial fibrillation with rapid ventricular response. This was her third admission for atrial fibrillation with uncontrolled heart rate in the past 6 months. Pharmacy records indicated she had not refilled either of her prescribed nodal blocking agents for several months. She was restarted on her reported home dose of metoprolol succinate at 50 mg daily and diltiazem 180 mg daily with prompt normalization of heart rate. She was discharged the following day.

Two days after returning home, the patient presented to the emergency department with a presyncopal episode caused by bradycardia and hypotension after an unintentional metoprolol overdose. She was admitted to the intensive care unit and initiated on a glucagon drip. Her symptoms resolved after 24 hours, and she was transferred to the floor. At discharge, the patient expressed frustration with her home medication regimen, stating that it was confusing, burdensome, and expensive. Her pill regimen at home included 11 medications: metoprolol, diltiazem, digoxin, apixaban, atorvastatin, lisinopril, furosemide, ibandronate, loratadine, ranitidine, and a multivitamin. The patient and her family desired to simplify her medication regimen, preferring to continue only those that would help preserve function and keep the patient out of the hospital. At discharge digoxin and atorvastatin were discontinued.

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The majority of this patient’s medications were prescribed in accordance with practice guidelines. However, harm was caused by not considering the entire context and individual circumstances for this patient, resulting in polypharmacy and multiple hospitalizations.

Polypharmacy is common, with nearly 20% of community-dwelling adults older than 65 years prescribed 10 or more medications. Changes in pharmacokinetics and pharmacodynamics associated with aging put older patients at greater risk for adverse drug events. One study found that compared with patients taking fewer than 5 medications, patients taking 8 or more medications had 4 times the rate of adverse drug events. Indeed, multiple studies have shown that adverse drug events account for up to 10% of hospital admissions in older adults.

Transitions of care are also associated with medication errors, which make hospital discharge an opportune time to address polypharmacy. A study conducted in elderly patients in the VA system found that 44% had at least 1 unnecessary medication at discharge.1

The medication list for this patient was simplified at discharge, but could more have been done to optimize the safety of her regimen? With the use of established prescribing tools such as Beers Criteria and STOPP,2 physicians can eliminate redundant or inappropriate medications in geriatric patients. In a study of nursing home patients presenting to the emergency department, both sets of criteria identified the same number of patients at risk of potentially inappropriate medications.3 In addition, there was no difference in the length of hospital stay and 12-month mortality when comparing patients prescribed potentially inappropriate medications according to Beers vs STOPP criteria.

Another strategy to optimize safe prescribing is to carefully match each medication to an associated medical condition.4 Medications without a clear indication can generally be discontinued. This patient was on a daily antihistamine as well as a histamine 2 blocker but had no history of seasonal allergies, gastritis, or gastroesophageal reflux disease. Thus, loratadine and ranitidine could be discontinued with monitoring for recurrent symptoms. She was also on a multivitamin, despite consuming a normal diet, which could be stopped as it was financially burdensome and unnecessary.

Optimizing an individual’s medication takes into account more than just practice guidelines but also patient preferences. Correctly assessing the unique preferences of the patient allows for tailoring medication regimens to each patient’s individual circumstances, including affordability, tolerability, and goals of care. In this case, the patient’s priorities were to minimize pill burden, improve affordability, and avoid hospitalization if at all possible.

Polypharmacy is a well-established problem for elderly patients. The discharge process provides an opportune time to address patient preferences and eliminate unnecessary medications. With simple and effective methods, such as STOPP criteria and matching each medication with an indication, clinicians can decrease polypharmacy and improve patient outcomes.

ARTICLE INFORMATION

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REFERENCES