

CCGP: Ten Key Geriatric Articles



Description: The following articles have been identified as pertinent geriatric literature. Each citation comes complete with a link, abstract, & excerpt(s) which provide a brief summary about each article.

Structure: This document is separated into 3 sections based on clinical theme. The clinical themes are:

1. Medication Appropriateness
2. Medication Monitoring & Adverse Drug Events
3. Geriatric Conditions/ Care

Medication Appropriateness: (4 articles)

1. Citation:

Steinman, MA, Hanlon JT. Managing Medications in Clinically Complex Elders “There’s Got to Be a Happy Medium”. *JAMA* 2010;304(14):1593-1601.

Link:

www.jama.ama-assn.org/content/304/14/1592.abstract

Abstract:

Multiple medication use is common in older adults and may ameliorate symptoms, improve and extend quality of life, and occasionally cure disease. Unfortunately, multiple medication use is also a major risk factor for prescribing and adherence problems, adverse drug events, and other adverse health outcomes. Using the case of an older patient taking multiple medications, this article summarizes the evidence-based literature about improving medication use and withdrawing specific drugs and drug classes. It also describes a systematic approach for how health professionals can assess and improve medication regimens to benefit patients and their caregivers and families.

Excerpts:

“The task for the clinician is not to determine whether too many or too few medications are being taken, but to determine if the patient is taking the right medications- tailored to the patients individual circumstances, including his or her constellation of comorbidities, goals of care, preferences, and ability to adhere to medications.”

“Although few data are available about the effect of structured medication management on patient health and well-being, such approaches are endorsed by experts, in part due to clear evidence of beneficial effects on markers of prescribing quality.”

2. Citation:

Huisman-Baron M, van der Veen L, Jansen PA, et al. Criteria for Drug Selection in Frail Elderly Persons. *Drugs Aging* 2011;28(5):391-402.

Link:

www.ncbi.nlm.nih.gov/pubmed/21542661

Abstract:

Background:

Elderly patients with multiple morbidities and polypharmacy are at an increased risk of adverse drug events (ADEs). Appropriate prescribing, preserving the balance between drug effectiveness and safety, and treatment adherence may prevent these ADEs. In this study, we investigated which drug properties, such as effectiveness, safety, clinical experience and convenience, are relevant to the choice of medicine most appropriate for frail elderly patients.

Objectives:

The primary aim of this study was to develop a set of criteria to assist in the selection of the most appropriate drug within a drug class for the treatment of frail elderly patients. A secondary goal was to test the usefulness of

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the set of criteria in the prescription of antipsychotics for delirium and behavioural and psychological symptoms of dementia (BPSD).

Methods:

Thirty-one criteria potentially relevant to the choice of appropriate drugs for frail elderly patients were selected on the basis of a literature search in MEDLINE (1966-2008), EMBASE (1947-2008) and the Cochrane Library (1993-2008). This list was reviewed by 46 experts (24 physicians, 22 pharmacists), who scored each item for relevance in clinical practice on a scale from 1 to 10 (where 1 is not important and 10 is very important). By consensus, the authors selected the most relevant criteria for the final set of criteria. The usefulness of the final set of criteria was assessed with regard to the prescription of antipsychotics for delirium and BPSD.

Results:

The final set of 23 items consisted of 3 items on effectiveness, 14 on safety, including pharmacokinetic and pharmacodynamic criteria, 3 on clinical experience and 3 on convenience. Assessment using these criteria of the appropriateness of antipsychotics prescribed for delirium and BPSD revealed that certain drugs should be prescribed with caution to patients with Parkinson's disease and Lewy body dementia.

Conclusions:

The criteria identified in this study, selected on the basis of a literature review and clinical expert opinion, represent a promising approach for determining the appropriateness of a drug for use in frail elderly individuals relative to alternative drugs for the same indication or from the same class.

Excerpts:

“Criteria reflecting aspects of pharmacotherapy in the frail elderly are needed to make an optimal choice of a drug within a drug class. As far as we know, such criteria have not yet been described in the literature.”

“This evidence and practice-based list proved useful for determining the appropriateness of a single antipsychotic for use in frail elderly patients compared with alternative drugs for the same indication or within the same class. This may be a promising approach for developing a drug formulary.”

3. Citation:

Le Couteur DG, Kendig H. Pharmaco-epistemology for the Prescribing Geriatrician. *Australasian Journal on Ageing* 2008;27(1):3-7.

Link:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1741-6612.2007.00271.x/abstract>

Abstract:

Clinicians are becoming more reliant on their interpretation of clinical trial information to guide prescribing rather than their clinical skills. Thus to improve prescribing, it is increasingly important for clinicians to have an appreciation of epistemology (the science of knowledge and its interpretation) and the broader social context of knowledge. The insights of epistemologists can be useful in understanding the different ways in which clinical trials data are interpreted.

Excerpts:

“We depend on information and evidence and in fact we prescribe information now rather than medications. An unquestioning acceptance of clinical trial data and evidence-based medicine makes us susceptible to many influences that might not be concordant with our patients’ best interests. We need to realise that we are working in an environment of contestable knowledge, and that this perspective is necessary for understanding the moving and uncertain basis of the knowledge we use to guide our prescribing. By layering an understanding of some of these epistemological concepts beneath our understanding of EBM, we should be able to prescribe better to our older frail patients.”

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4. Citation:

Holmes HM, Hayley DC, Alexander GC, et al. Reconsidering Medication Appropriateness for Patients Late in Life. *Arch Intern Med* 2006;166:605-609.

Link:

<http://archinte.ama-assn.org/cgi/content/extract/166/6/605>

Abstract:

Providing guideline-adherent care for many medical conditions increasingly means the addition of more medications to reach disease-specific targets. When might it be best to withhold or discontinue medications that are otherwise appropriate on the basis of guidelines? Receiving facsimiles from the pharmacy serving a local nursing home encouraging us to prescribe statins for residents there symbolizes the issues. Most of these patients had a limited life expectancy, were older than 90 years, or had advanced dementia. Similar situations occur in patients with functional impairments, frailty, or diseases like emphysema, congestive heart failure, or coronary artery disease in their advanced stages, for whom starting or continuing many recommended drugs does not seem the best way to optimize care.

Investigators in a number of studies have characterized inappropriate prescribing in the elderly, but there is little information to guide discontinuation of otherwise indicated medications in patients late in life. We propose a process for medication prescribing in patients late in life that builds on the principles of appropriate prescribing and includes a consideration of remaining life expectancy, goals of care, and potential benefits of medications.

Excerpts:

“Regardless of standards of care, practice guidelines, and other clinical pathways, shared decision making among physicians, patients and families about goals of care is important when deciding whether to stop, start, or continue therapy with a medicine for a patient late in life, As disease progresses and it is clearer that cure is not realistic an individualized approach to patients treatment may become increasingly palliative.”

“Our model addresses issues when one considers medication use late in life that are not adequately considered with existing models of medication appropriateness, thus our model could aid in the development of guidelines to reduce polypharmacy in older patients who may have a limited life expectancy.”

Medication Monitoring & Adverse Drug Events: (3 articles)

1. Citation:

Steinman MA, Handler SM, Gurwitz JH, et al. Beyond the Prescription: Medication Monitoring and Adverse Drug Events in Older Adults. *J Am Geriatr Soc* 2011;59(8):1513-1520.

Link:

www.ncbi.nlm.nih.gov/pubmed/21797831

Abstract:

Whether a person will suffer harm from a medication or how severe that harm will be is difficult to predict precisely. As a result, many adverse drug events (ADEs) occur in patients in whom it was reasonable to believe that the drug's benefits exceeded its risks. Improving safety and reducing the burden of ADEs in older adults requires addressing this uncertainty by not only focusing on the appropriateness of the initial prescribing decision, but also by detecting and mitigating adverse events once they have started to occur. Such enhanced monitoring of signs, symptoms, and laboratory parameters can determine whether an adverse event has only mild and short-term consequences or major long-term effects on morbidity and mortality. Although current medication monitoring practices are often suboptimal, several strategies can be leveraged to improve the quality and outcomes of monitoring. These strategies include using health information technology to link pharmacy and laboratory data, prospective delineation of risk, and patient outreach and activation, all within a framework of team-based approaches to patient management. Although many of these strategies are theoretically possible

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now, they are poorly used and will be difficult to implement without a significant restructuring of medical practice. An enhanced focus on medication monitoring will also require a new conceptual framework to re-engineer the prescribing process. With this approach, prescribing quality does not hinge on static attributes of the initial prescribing decision but entails a dynamic process in which the benefits and harms of drugs are actively monitored, managed, and reassessed over time.

Excerpts:

“This article describes a conceptual framework for considering a more-proactive role in monitoring symptoms, signs, and laboratory parameters for adverse events and suggests approaches to help overcome current problems in monitoring practices.”

“There is no single ‘best’ solution. The evidence base is insufficiently robust to allow direct comparisons, and the effectiveness of any given strategy is highly dependent on local conditions, including the ability to piggyback monitoring interventions onto existing, broad-based programs. Thus, the choice of which strategy will yield the most value for any given office practice, institution, or healthcare system will depend on local circumstances, incentives, and identification of areas where there is readiness for change.”

2. Citation:

Field TS, Mazor KM, Briesacher B, et al. Adverse Drug Events Resulting from Practice Errors in Older Adults. *J Am Geriatric Soc* 2007;55:271-276.

Link:

<http://www.ncbi.nlm.nih.gov/pubmed/17302666>

Abstract:

Objectives: To characterize the types of patient-related errors that lead to adverse drug events (ADEs) and identify patients at high risk of such errors.

Design: A subanalysis within a cohort study of Medicare enrollees.

Setting: A large multispecialty group practice.

Participants: Thirty thousand Medicare enrollees followed over a 12-month period.

Measurements:

Primary outcomes were ADEs, defined as injuries due to a medication, and potential ADEs, defined as medication errors with the potential to cause an injury. The subset of these events that were related to patient errors was identified.

Results:

The majority of patient errors leading to adverse events (n=129) occurred in administering the medication (31.8%), modifying the medication regimen (41.9%), or not following clinical advice about medication use (21.7%). Patient-related errors most often involved hypoglycemic medications (28.7%), cardiovascular medications (21.7%), anticoagulants (18.6%), or diuretics (10.1%). Patients with medication errors did not differ from a comparison group in age or sex but were taking more regularly scheduled medications (compared with 0-2 medications, odds ratio (OR) for 3-4 medications=2.0, 95% confidence interval (CI)=0.9-4.2; OR for 5-6 medications=3.1, 95% CI=1.5-7.0; OR for >or=7 medications=3.3, 95% CI=1.5-7.0). The strongest association was with the Charlson Comorbidity Index (compared with a score of 0, OR for a score of 1-2=3.8, 95% CI=2.1-7.0; OR for a score of 3-4=8.6, 95% CI=4.3-17.0; OR for a score of >or=5=15.0, 95% CI=6.5-34.5).

Conclusion:

The medication regimens of older adults present a range of difficulties with the potential for harm. Strategies are needed that specifically address the management of complex drug regimens.

Excerpts:

“This study describes the elements of the patient medication-handling system that are most closely associated with important errors leading to adverse effects. In this study, the number of regularly scheduled medications and the Charlson Comorbidity Index, a weighted summary score of serious medical conditions, were both associated with higher risk of patient errors.”

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“Issues that have been identified in the literature as increasing the complexity of prescribed regimens include medications with conflicting administration patterns, frequent changes in administration schedules, the inclusion of as-needed drugs and those for which dose and frequency are based on patient monitoring, and medication handling that produces disruptions in patients’ lifestyles.”

3. Citation:

Budnitz DS, Shehab N, Kegler SR, et al. Medication Use leading to Emergency Department Visits for Adverse Drug Events in Older Adults. *Ann Intern Med* 2007;147:755-765.

Link:

www.annals.org/content/147/11/755

Abstract:

Background: The Beers criteria identify inappropriate use of medications in older adults. The number of and risk for adverse events from these medications are unknown.

Objective: To estimate the number of and risk for emergency department visits for adverse events involving Beers criteria medications compared with other medications.

Design: Nationally representative, public health surveillance of adverse drug events and a cross-sectional survey of outpatient medical visits.

Setting: National Electronic Injury Surveillance System–Cooperative Adverse Drug Event Surveillance System, 2004–2005; National Ambulatory Medical Care Survey, 2004; and National Hospital Ambulatory Medical Care Survey, 2004.

Participants: Persons 65 years of age or older seeking emergency department and outpatient care.

Measurements:

Estimated number of and risks for emergency department visits for adverse drug events involving Beers criteria medications and other medications.

Results:

Among U.S. patients 65 years of age or older, an estimated 177 504 emergency department visits (95% CI, 100 155 to 254 854 visits) for adverse drug events occurred both years. An estimated 3.6% (CI, 2.8% to 4.5%) of these visits were for adverse events medications considered to be always potentially inappropriate, according to the Beers criteria, and 33.3% (CI, 27.8% to 38.7%) of visits were for adverse events from 3 other medications (warfarin [17.3%], insulin [13.0%], and digoxin [3.2%]). Accounting for outpatient prescription frequency, the risk for emergency department visits for adverse events due to these 3 medications was 35 times (CI, 9.6 to 61) greater than that for medications considered to be always potentially inappropriate.

Limitation:

Adverse events were identified only in emergency departments.

Conclusion:

Compared with other medications, Beers criteria medications caused low numbers of and few risks for emergency department visits for adverse events. Performance measures and interventions targeting warfarin, insulin, and digoxin use could prevent more emergency department visits for adverse events.

Excerpts:

“The Beers criteria have received renewed attention as a quality and safety measure because prescription data can be easily collected using administrative sources, and substituting a superior medication for an inferior is an elegant clinical intervention.”

“Clinicians should continue to use criteria of medication appropriateness to optimize medication selection for their older patients. However, these national public health surveillance and data suggest that there may be considerable opportunity to reduce adverse events in older patients through interventions that improve the use of anticoagulants, antidiabetic agents, and narrow therapeutic index medications.”

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Geriatric Conditions/Care: (3 articles)

1. Citation:

O'Mahony D, O'Connor MN. Pharmacotherapy at the end-of-life. *Age and Ageing* 2011;40:419-422.

Link:

<http://ageing.oxfordjournals.org/content/40/4/419.abstract>

Abstract:

Older people reaching end-of-life status are particularly at risk from inter-related adverse effects of pharmacotherapy, including polypharmacy, inappropriate medications and adverse drug events. These adverse effects of pharmacotherapy may be highly detrimental, as well as highly expensive. End-of-life pharmacotherapy is sometimes perceived to be complex and challenging, probably unnecessarily. This relates in part to the poorly developed evidence base and lack of high-quality research in this area. In this article, we deal with some of the key issues relating to pharmacotherapy in end-of-life patients, namely (i) the guiding principles of drug selection, (ii) the main drugs and drug classes that are best avoided, (iii) the benefits of 'oligopharmacy' (i.e. deliberate avoidance of polypharmacy) in end-of-life patients.

Excerpts:

"Although frailer, older people are usually excluded from randomized controlled trials, prescribers often persist with evidence-based prescribing in end-of-life older patients. In turn, this evidence-based approach of prescribing for all treatable medical conditions is unnecessarily expensive and ultimately of dubious benefit to the patient."

"Most older people reach end-of-life status having been prescribed medicines for a variety of chronic medical conditions and polypharmacy is commonplace, even in patients with advanced dementia. Identification of end-of-life should bring about a significant reduction in the number of daily drugs."

2. Citation:

Boyd CM, Darer J, Boulton C, et al. Clinical Practice Guidelines and Quality of Care for Older Patients with Multiple Comorbid Diseases: Implications for Pay for Performance. *JAMA* 2005;294:716-724.

Link:

<http://jama.jamanetwork.com/article.aspx?articleid=201377>

Abstract:

Context: Clinical practice guidelines (CPGs) have been developed to improve the quality of health care for many chronic conditions. Pay-for-performance initiatives assess physician adherence to interventions that may reflect CPG recommendations.

Objective: To evaluate the applicability of CPGs to the care of older individuals with several comorbid diseases.

Data Sources: The National Health Interview Survey and a nationally representative sample of Medicare beneficiaries (to identify the most prevalent chronic diseases in this population); the National Guideline Clearinghouse (for locating evidence-based CPGs for each chronic disease).

Study Selection: Of the 15 most common chronic diseases, we selected hypertension, chronic heart failure, stable angina, atrial fibrillation, hypercholesterolemia, diabetes mellitus, osteoarthritis, chronic obstructive pulmonary disease, and osteoporosis, which are usually managed in primary care, choosing CPGs promulgated by national and international medical organizations for each.

Data Extraction: Two investigators independently assessed whether each CPG addressed older patients with multiple comorbid diseases, goals of treatment, interactions between recommendations, burden to patients and caregivers, patient preferences, life expectancy, and quality of life. Differences were resolved by consensus. For a hypothetical 79-year-old woman with chronic obstructive pulmonary disease, type 2 diabetes, osteoporosis, hypertension, and osteoarthritis, we aggregated the recommendations from the relevant CPGs.

Data Synthesis: Most CPGs did not modify or discuss the applicability of their recommendations for older patients with multiple comorbidities. Most also did not comment on burden, short- and long-term goals, and the quality of the underlying scientific evidence, nor give guidance for incorporating patient preferences into

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treatment plans. If the relevant CPGs were followed, the hypothetical patient would be prescribed 12 medications (costing her \$406 per month) and a complicated nonpharmacological regimen. Adverse interactions between drugs and diseases could result.

Conclusions: This review suggests that adhering to current CPGs in caring for an older person with several comorbidities may have undesirable effects. Basing standards for quality of care and pay for performance on existing CPGs could lead to inappropriate judgment of the care provided to older individuals with complex comorbidities and could create perverse incentives that emphasize the wrong aspects of care for this population and diminish the quality of their care. Developing measures of the quality of the care needed by older patients with complex comorbidities is critical to improving their care.

Excerpts:

“Assessing physicians on the basis of the care they provide for individual diseases obscures the complexity of treating real, and particularly older, patients with several chronic diseases.”

“Standards that define quality of patient care regardless of a patient’s health status and preferences by placing emphasis on attaining high rates of adherence to CPGs rather than the more difficult task of weighing burden, risks, and benefits of complex therapies in shared decision making could ultimately undermine quality of care.”

3. Citation:

Reuben DB. Medical Care for the Final Years of Life: “When You’re 83, It’s Not Going to Be 20 Years”. *JAMA* 2009;302(24):2686-2694.

Link:

<http://jama.jamanetwork.com/article.aspx?articleid=185092>

Abstract:

The case of an 83-year-old man who has had a fall-related injury and continues to be the sole caregiver for his wife who has dementia exemplifies a common situation that clinicians face—planning for the final years of an elderly individual’s life. To appropriately focus on the patient’s most pressing issues, the approach should begin with an assessment of life expectancy and incorporation of evidence-based care whenever possible. Short-term issues are focused on efforts to restore the patient to his previous state of health. Mid-range issues address providing preventive care, identifying geriatric syndromes, and helping him cope with the psychosocial needs of being a caregiver. Long-term issues relate to planning for his eventual decline and meeting his goals for the end of life. Unfortunately, the workload and inefficiencies of primary care practice present barriers to providing optimal care for older patients. Systematic approaches, including team care, are needed to adequately manage chronic diseases and coordinate care.

Excerpts:

“To help Mr. Z remain independent for as long as possible, recommended care should be based on evidence whenever possible. For individuals of Mr. Z’s age and older, however, a conventional evidence-based approach is modified by 3 important caveats: prognosis, insufficient evidence, and patient goals and preferences.”

“In this phase, the evidence for many decisions may not fit the individual patient’s specific clinical situation or unique cluster of medical and social issues. Hence, the physician must rely on experience, knowledge, and clinical judgment. This combination of the science, wisdom, and skill of medicine is the key to providing the best care for older patients in their final years of life.”
