REVISIÓN BIBLIOGRÁFICA ABRIL 2018:
preselección de artículos

BMC Geriatrics

Characteristics of elderly patients with polypharmacy who refuse to participate in an in-hospital deprescribing intervention: a retrospective cross-sectional study

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Abstract

Background

Few studies have evaluated the characteristics of elderly patients with polypharmacy refusing deprescribing. The aim of this study was to evaluate the prevalence of potentially inappropriate medication (PIM) use in elderly patients accepting and refusing a deprescribing intervention and to investigate factors associated with deprescribing refusal.

Methods

We conducted a retrospective cross-sectional study by analyzing the electronic medical records from a single hospital. All consecutive patients aged 65 years or older who reported the use of five or more medications upon admission to the orthopedic ward from January 2015 to December 2016 and who were approached by a pharmacist for polypharmacy screening were included. Patients who had provided consent for the deprescribing intervention by the internal medicine physicians were defined as the acceptance group, and patients who did not were defined as the refusal group. The primary outcome was the use of any PIMs at admission, based on the 2015 American Geriatric Society Beers Criteria. Using multivariable logistic regression, predictive factors of refusing deprescribing were also evaluated.

Results

During the study period, 136 patients were eligible. Of those, 82 patients (60.3%) accepted the deprescribing intervention, and 54 patients (39.7%) declined the intervention. The mean age of all the patients was 81.1 years, and the mean number of medications at admission was 9.3. The overall proportion of patients taking any PIMs at admission was 77.2%. The proportion of patients taking any PIMs at admission was not different between the acceptance and refusal groups (78.0% and 75.9%, respectively; $p = 0.84$). None of the measured characteristics, including age, gender, residential status, comorbidity, alcohol use, smoking status, number of medications, or number of PIMs, were found to be associated with deprescribing refusal.

Conclusion

The prevalence of any PIM use did not differ among elderly orthopedic patients with polypharmacy according to refusal or acceptance of the deprescribing intervention. Furthermore, none of the analyzed characteristics were found to be associated with deprescribing refusal. Given the high prevalence of PIM use, a strategy is needed for combating polypharmacy among elderly patients reluctant to undergo deprescribing.

Disponible en: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-018-0788-1

Single and dual antiplatelet therapy in elderly patients of medically managed myocardial infarction

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Abstract

Backgrounds

To examine the comparative effectiveness between dual and single antiplatelet therapies in real-world, medically managed elderly patients with acute myocardial infarction (AMI).

Methods

This retrospective study identified very elderly (> 85 years) patients, who were medically managed, with their first AMI from the Taiwan National Health Insurance claims database from 2007 to 2010. Patients were classified as dual antiplatelet therapy (DAPT) group, aspirin only group and clopidogrel only group. Study outcomes included all-cause death, cardiovascular death and gastrointestinal bleeding. Treating DAPT group as the reference, we employed a multivariable Cox regression model to compare the relative risks of outcomes between 3 groups using pairwise comparison approach.

Results

Among 1469 patients with incident ST-elevation myocardial infarction (STEMI, 14%) or non-STEMI (86%), 390 patients were prescribed DAPT, 549 aspirin only, and 530 clopidogrel only. After 9 months of follow-up, aspirin only group had similar risks of all-cause death (adjusted HR 1.21, 95% CI 0.77–1.89, $p = 0.41$), cardiovascular death (adjusted HR 1.16, 95% CI 0.66–2.04, $p = 0.60$) and gastrointestinal bleeding (adjusted HR 1.66, 95% CI 0.77–3.57, $p = 0.20$) in comparison with DAPT group. Clopidogrel users had a higher risk of all-cause death (adjusted HR 1.50, 95% CI 1.00–2.25, $p = 0.049$) but similar risks of cardiovascular death and gastrointestinal bleeding when compared with DAPT.

Conclusions

Among very elderly patients who were medically managed after AMI, single antiplatelet therapy had comparable protective effect as DAPT. But clopidogrel only strategy was associated with a higher risk of all-cause death.

Disponible en: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-018-0777-4

DRUGS AND AGING

Impact of Deprescribing Interventions in Older Hospitalised Patients on Prescribing and Clinical Outcomes: A Systematic Review of Randomised Trials

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Abstract

Background

Polypharmacy and potentially inappropriate medications (PIMs) are prevalent in older adults in hospital, and are associated with negative outcomes including adverse drug reactions, falls, confusion, hospitalisation and death. Deprescribing may reduce inappropriate polypharmacy and use of inappropriate medications.

Objective

The aim of this systematic review was to investigate the efficacy of deprescribing interventions in older inpatients to reduce PIMs and impact on clinical outcomes.

Methods
Ovid MEDLINE, Embase, Informit, International Pharmaceutical Abstracts, Scopus, PsycINFO, the Cochrane Central Register of Controlled Trials (CENTRAL) and CINAHL were searched for randomised controlled trials (RCTs) from 1996 to April 2017. RCTs reporting on deprescribing interventions to reduce PIMs in older hospitalised adults were eligible. Data were extracted, and study quality assessed. The primary outcome was reduction in PIMs. Where available, clinically relevant outcomes were assessed.
Results
Nine RCTs (*n* = 2522 subjects) met the inclusion criteria. Deprescribing interventions were either pharmacist-led (*n* = 4), physician-led (*n* = 4) or multidisciplinary team-led (*n* = 1). Seven of the nine studies reported a statistically significant reduction in PIMs in the intervention group. There was no change in one study where there were zero PIMs on admission and discharge, and in the other study a reduction in PIMs that was not statistically significant was observed. There was significant heterogeneity in outcome measures and reporting. Few studies reported on the impact of deprescribing interventions on clinical outcomes. Reported clinical outcomes included drug-related problems (*n* = 3), quality of life (*n* = 2), mortality (*n* = 3), hospital readmissions (*n* = 4), falls (*n* = 3) and functional status (*n* = 2). Most studies reported a benefit in the intervention group that was not statistically significant. No notable harm was observed in the intervention group. There was a high risk of bias in the included studies.
Conclusions
The evidence available suggests that deprescribing interventions in hospital are feasible, generally effective at reducing PIMs and safe. However, the current evidence is limited, of low quality and the impact on clinical outcomes is unclear.

Disponible en: https://link.springer.com/article/10.1007/s40266-018-0536-4

Development and Application of the GheOP3S-Tool Addendum on Potentially Inappropriate Prescribing (PIP) of Renally Excreted Active Drugs (READs) in Older Adults with Polypharmacy

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Abstract
Background
Renal function progressively worsens with age. Potentially inappropriate prescribing (PIP) of renally excreted active drugs (READs) is common in older adults, leading to an increased rate of iatrogenic illness. The Ghent Older People's Prescription community Pharmacy Screening (GheOP3S-) tool is an effective, explicit instrument that was developed for community pharmacists (CPs) to detect PIP. So far, this tool does not assess PIP of the frequently used READs in older patients with renal impairment.
Objectives
This study aimed to expand the GheOP3S-tool with the first addendum to screen for PIP of frequently used READs, and to perform a cross-sectional analysis using the addendum and the medication history of a group of older adults with polypharmacy.
Methods
The addendum was developed in three steps: (1) collection of individual and combined READs, (2) collection of dose-adjustment recommendations, and (3) expert panel evaluation. Consequently, the addendum was applied retrospectively on the medication list of 60 older adults with polypharmacy and with four renal function-estimating equations.

Results
The addendum includes 61 READs recommendations for dose/drug-adjustment alternatives, laboratory test follow-ups, and patients' referral to specialists' care. In the cross-sectional analysis, 35–78% of patients were diagnosed with renal impairment, depending on the equations used for renal function estimation. Among patients with renal impairment, 21–46% of the prescribed READs were deemed potentially inappropriate by the GheOP3S-tool addendum.
Conclusion
The GheOP3S-tool was expanded with an addendum on PIP of READs in renal impairment for older patients. The cross-sectional analysis using the addendum suggests that PIP of READs is common in older patients with polypharmacy and renal impairment. Using this addendum, CPs might contribute to diminishing PIP of READs.

Disponible en: https://link.springer.com/article/10.1007/s40266-018-0530-x

JOURNAL OF THE AMERICANS GERIATRIC SOCIETY

Medical Costs of Fatal and Nonfatal Falls in Older Adults

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Abstract
Objectives
To estimate medical expenditures attributable to older adult falls using a methodology that can be updated annually to track these expenditures over time.
Design
Population data from the National Vital Statistics System (NVSS) and cost estimates from the Web-based Injury Statistics Query and Reporting System (WISQARS) for fatal falls, quasi-experimental regression analysis of data from the Medicare Current Beneficiaries Survey (MCBS) for nonfatal falls.
Setting
U.S. population aged 65 and older during 2015.
Participants
Fatal falls from the 2015 NVSS (N=28,486); respondents to the 2011 MCBS (N=3,460).
Measurements
Total spending attributable to older adult falls in the United States in 2015, in dollars.
Results
In 2015, the estimated medical costs attributable to fatal and nonfatal falls was approximately $50.0 billion. For nonfatal falls, Medicare paid approximately $28.9 billion, Medicaid $8.7 billion, and private and other payers $12.0 billion. Overall medical spending for fatal falls was estimated to be $754 million.
Conclusion
Older adult falls result in substantial medical costs. Measuring medical costs attributable to falls will provide vital information about the magnitude of the problem and the potential financial effect of effective prevention strategies.

Disponible en: https://onlinelibrary.wiley.com/doi/abs/10.1111/jgs.15304

INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY

Risk of death associated with new benzodiazepine use among persons with Alzheimer disease: A matched cohort study

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Abstract

Objective

To investigate the risk of death associated with new benzodiazepine and related drug (BZDR) use in a nationwide cohort of persons with Alzheimer disease (AD).

Methods

The register-based MEDALZ cohort, including all community-dwelling Finns diagnosed with AD during 2005 to 2011 (n = 70 718), was used. Clinically verified AD diagnoses were obtained from the Special Reimbursement Register. Drug use periods were modeled from BZDR purchases, derived from the Prescription Register. To study new users, persons who had any BZDR use during the year preceding the AD diagnosis were excluded.

For each person initiating BZDR use (n = 10 380), 2 nonusers (n = 20 760) were matched on age, gender, and time since AD diagnosis. The outcome was 180-day mortality, and BZDR use was compared with nonuse with Cox regression. Multivariable analyses were adjusted for Charlson comorbidity index, socioeconomic position, hip fractures, psychiatric disorders, substance abuse, stroke, and other psychotropic drug use.

Results

During the follow-up, 5 excess deaths per 100 person-years occurred during BZDR use in comparison to nonuse, and mortality rates were 13.4 (95% confidence interval [CI], 12.2-14.5) and 8.5 (95% CI, 7.9-9.1), respectively. Benzodiazepine and related drug use was associated with an increased risk of death (adjusted hazard ratio = 1.4 [95% CI, 1.2-1.6]), and the association was significant from the initiation of use. Benzodiazepine use was associated with an increased risk of death, whereas benzodiazepine-related drug use was not.

Conclusions

Benzodiazepine and related drug use was associated with an increased risk of death in persons with AD. Our results support treatment guidelines stating that nonpharmacological approaches should be the first-line option for symptomatic treatment of AD.

Disponible en: https://onlinelibrary.wiley.com/doi/abs/10.1002/gps.4821

JOURNAL OF GERONTOLOGY

The Prevalence of Vitamin D Deficiency and the Determinants of 25(OH)D Concentration in Older Irish Adults: Data From The Irish Longitudinal Study on Ageing (TILDA)

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Abstract

Background

Few data are available examining the determinants of vitamin D status exclusively in older adults. We aimed to investigate the prevalence and determinants of vitamin D deficiency in a representative sample of the older Irish population (aged 50–98 years).

Methods

The concentration of 25-hydroxyvitamin D (25(OH)D) was measured in 5,356 community-dwelling older Irish adults from The Irish Longitudinal Study on Ageing (TILDA). Detailed demographic, geographic, lifestyle, and socioeconomic factors were assessed by questionnaire. Proportions of deficiency prevalence were generated by season sampled. Linear regression was used to investigate the association between 25(OH)D concentration and reported risk factors.

Results

The prevalence of deficiency (25(OH)D < 30 nmol/L) was 13.1% (95% CI: 12.1–14.2). Deficiency status was more prevalent in nonsupplement users, in winter, in smokers, in obese adults, the physically inactive, those living alone, and in the oldest old (>80 years). The main predictors (p < .05) of 25(OH)D concentration were supplement use (coefficient nmol/L: 27.2 [95% CI: 15.3–39.2]), smoking (−8.9 [−12.6–−5.2]), summer season (5.9 [2.7–9.1]), and obesity (−4.0 [−6.3–−1.7]).

Conclusion

Vitamin D deficiency is common among older Irish adults. These data indicate the need for targeted strategies within sections of the older population to improve vitamin D status.

Disponible en: https://academic.oup.com/biomedgerontology/article-abstract/73/4/519/4103040?redirectedFrom=fulltext

Delirium, Frailty, and Mortality: Interactions in a Prospective Study of Hospitalized Older People

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Abstract

Background

It is unknown whether the association between delirium and mortality is consistent for individuals across the whole range of health states. A bimodal relationship has been proposed, where delirium is particularly adverse for those with underlying frailty, but may have a smaller effect (perhaps even protective) if it is an early indicator of acute illness in fitter people. We investigated the impact of delirium on mortality in a cohort simultaneously evaluated for frailty.

Methods

We undertook an exploratory analysis of a cohort of consecutive acute medical admissions aged ≥70. Delirium on admission was ascertained by psychiatrists. A frailty index (FI) was derived according to a standard approach. Deaths were notified from linked national mortality statistics. Cox regression was used to estimate associations between delirium, frailty, and their interactions on mortality.

Results

The sample consisted of 710 individuals. Both delirium and frailty were independently associated with increased mortality rates (delirium: HR 2.4, 95% CI 1.8–3.3, p < .01; frailty (per *SD*): HR 3.5, 95% CI 1.2–9.9, p = .02). Estimating the effect of delirium in tertiles of FI, mortality was greatest in

the lowest tertile: tertile 1 HR 3.4 (95% CI 2.1–5.6); tertile 2 HR 2.7 (95% CI 1.5–4.6); tertile 3 HR 1.9 (95% CI 1.2–3.0).

Conclusion

Although delirium and frailty contribute to mortality, the overall impact of delirium on admission appears to be greater at lower levels of frailty. In contrast to the hypothesis that there is a bimodal distribution for mortality, delirium appears to be particularly adverse when precipitated in fitter individuals.

Disponible en: https://academic.oup.com/biomedgerontology/article/73/3/415/4584142

THE GERONTOLOGIST

Caregiver Perspectives About Using Antipsychotics and Other Medications for Symptoms of Dementia

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Abstract

Background and Objectives

To avoid “chemical restraints,” policies and guidelines have been implemented to curb the use of medications for behavioral and psychological symptoms of dementia (BPSD). Antipsychotics have been particularly targeted because of their rare severe side effects. Consequently, caregiver directed non-pharmacologic therapies have increased while medication use for BPSD has diminished. Despite such initiatives, however, antipsychotics continue to be prescribed “off-label” for roughly 20% of nursing home patients. How caregivers impact management approaches and prescribing decisions for BPSD, including antipsychotic use, is poorly understood. Aim: assesses experiences and perceptions of family and nursing caregivers regarding factors influencing medication decisions for BPSD.

Research Design and Methods

Semi-structured interviews, analyzed via template, immersion and crystallization, and thematic development. Thirty-two participants from Northwestern Virginia representing five groups of caregivers for dementia patients were interviewed: families of community-dwelling, assisted living, and nursing home patients, and nurses from the same assisted living/nursing home facilities.

Results

Caregivers described three major themes regarding medications: (a) Systemic barriers exist for non-pharmacologic BPSD therapies. (b) Medications have few barriers, and seem generally effective and safe. (c) When non-pharmacologic measures fail, medications, including antipsychotics, may be necessary and appropriate for palliation of patient distress.

Discussion and Implications

To further reduce medications for BPSD, obstacles to services and alternative therapies must be mitigated. Caregiver perceptions that medications are generally safe and effective contribute to their continued use. Guidelines and policies for BPSD management should incorporate the caregiver position that medications, including antipsychotics, are sometimes justified and required to alleviate patient suffering.

Disponible en: https://watermark.silverchair.com/gnx042.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3

ZL_9Cf3qfKAc485ysgAAAbUwggGxBgkqhkiG9w0BBwagggGiMIIBngIBADCCAZcGCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQMKx7Y7Hpb0PeX8VMYAgEQgIIBaMDkn-nlBGy_wSimEDLf36Uf8yWPjI_K_inEmoYrcTnQUac0kgWvQlY7RLsSQb7e5pSLUxGwQ0BCyMKP02_a9JhIfWhjh7kFRVA5S4pUjzKM0-V_OZhueky86wHn11aeN8KbKaAAeBg688EuqAThgr33ub8_N3hMTGeauh-exDfUGBtPxV0PlGoYNLdRw6e_9QBFrI7aWSZelxTkCCxGu7kpYpmz842kutQ0gTI58xJs-YGo8wqQflOmTkGWt7R0cCS7fzGh3NxXfpS4U38J76x_5UJaOR1gggRrEe2avtvQlhncaxzOlEdjOofKkqk8sIIZo-L9U5v7BkTbeqb62us6J9D4988e0hWsrzbunXQ7FvjoI0omAq7TxOy1jJiZ0F5T7i9mDVhiqCLF9Zqtem3hZlkT-LFLqon9jTVW4bv9jhIu1NRLKNsA_lt1b15JW5gbc7tdQkVSnJQZBbSw1YMEV41i0Q8csQ

PHARMACOTHERAPY

Considerations for Optimal Blood Pressure Goals in the Elderly Population: A Review of Emergent Evidence

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Abstract

Recent hypertension clinical trials and national guideline updates have created a debate on the most appropriate treatment goals in elderly patients with hypertension. In 2014, recommendations by the Eighth Joint National Committee allowed a more lenient goal for patients 60 years and older compared with previous guidelines. Since then, several large clinical trials and meta-analyses have added more information regarding strict versus lenient treatment goals. Most recently, the American College of Cardiology and American Heart Association Task Force published their highly anticipated hypertension guideline developed in conjunction with nine additional interdisciplinary organizations. This review discusses the culmination of emerging data to provide more insight into the treatment of hypertension in the elderly. A literature search was conducted using PubMed, the Cumulative Index of Nursing and Allied Health, the Cochrane database, and by hand-searching references from relevant articles. The following key terms were used: hypertension, blood pressure, systolic, and elderly. Available literature suggests that it is reasonable to target an office systolic blood pressure of less than 130 mm Hg in elderly patients with hypertension. An individualized approach is reasonable for those who are institutionalized, with high comorbidity burden, or have a short life expectancy. A diastolic blood pressure of less than 60 mm Hg should be avoided due to the potential for an increase in cardiovascular risk. The method of blood pressure measurement is extremely important to consider when determining the blood pressure goal, and proper procedures for accurate blood pressure measurement must be followed. Other factors important to consider may include the patient's comorbidities, frailty, as well as the patient's potential for adverse drug reactions.

Disponible en: https://onlinelibrary.wiley.com/doi/abs/10.1002/phar.2081

INTERNATIONAL JOURNAL OF CLINICAL PHARMACY

Frail older people with multi-morbidities in primary care: a new integrated care clinical pharmacy service

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Abstract

Background Older people confined to their own homes due to frailty, multiple longterm conditions and/or complex needs, are known to be at risk of medicines-related problems. Whilst a health and social care team approach to supporting these patients is advocated, there is limited evidence regarding how pharmacists can best contribute.

Objective To describe a new specialist pharmacy service (called the integrated care clinical pharmacist) in terms of how it works, what it achieves and its policy implications.

Setting Patients' own homes in Lambeth, London, UK.

Method Community matrons identified patients who were experiencing medicines related problems. These were referred to the integrated care clinical pharmacist who undertook a full medication review and recorded activities, which were independently analysed anonymously.

Main outcome measure Medicines-related problems and the associated interventions.

Result 143 patients were referred to the service over a 15-month period. A total of 376 medicines-related problems were identified: 28 (7%) supply issues, 107 (29%) compliance issues, 241 (64%) clinical issues. A diverse range of interventions were instigated by the pharmacist, requiring the coordination of community pharmacists, primary and secondary health and social care professionals.

Conclusion This project demonstrated that including an integrated care clinical pharmacy service as part of the health and social care team that visits frail, older people in their own homes has benefits. The service operated as part of a wider inter-professional community team. The service also supported current health policy priorities in medicines optimization by identifying and addressing a wide range of medicines related problems for this vulnerable patient group.

Disponible en: https://link.springer.com/article/10.1007/s11096-017-0566-8

Inappropriate anticholinergic drugs prescriptions in older patients: analysing a hospital database

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Abstract

Background Although many anticholinergics are inappropriate in older patients, the prescription of these drugs in a hospital setting has not been extensively studied.

Objective To describe prescriptions of anticholinergic drugs in terms of frequency, at risk situations and constipation in hospitalized, older adults.

Setting Using a database from a French general hospital (period 2009–2013), we extracted information on 14,090 hospital stays by patients aged 75 and over.

Methods Anticholinergic drug prescriptions were automatically detected, with a focus on prescriptions in three well-known at-risk situations: falls, dementia, and benign prostatic hyperplasia. Cases of constipation that might have been causally related to the administration of anticholinergic drugs were screened for and reviewed.

Main outcome measure Prescriptions with a high associated risk of anticholinergic related adverse reactions.

Results Administration of an anticholinergic drug was detected in 1412 (10.0%) of the hospital stays by older patients. At-risk situations were identified in 413 (36.5%) of these stays: 137 (9.7%) for falls, 243 (17.2%) for dementia, and 114 (8.1%) for benign prostatic hyperplasia; 78 (18.9%) of these 413 stays featured a combination of two or three at-risk situations. Cases of constipation induced by anticholinergic drug administration were identified in 188 (13.3%) patient stays by using validated adjudication rules for adverse drug reactions: 85 and 103 cases were respectively evaluated as “possible” or “probable” adverse drug reactions.

Conclusions Anticholinergic drugs prescription was found in 10.0% of hospitalized, older patients. More than one third of these prescriptions occurred in at-risk situations and more than one in ten prescriptions induced constipation.

Disponible en: https://link.springer.com/article/10.1007/s11096-017-0554-z

JOURNAL OF CLINICAL PHARMACY AND THERAPEUTICS

A comparison of two tools to screen potentially inappropriate medication in internal medicine patients

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Summary

What is known

Potentially inappropriate medication (PIM) is an important issue for inpatient management; it has been associated with safety problems, such as increases in adverse drugs events, and with longer hospital stays and higher healthcare costs.

Objective

To compare two PIM-screening tools—STOPP/START and PIM-Check—applied to internal medicine patients. A second objective was to compare the use of PIMs in readmitted and non-readmitted patients.

Method

A retrospective observational study, in the general internal medicine ward of a Swiss non-university hospital. We analysed a random sample of 50 patients, hospitalized in 2013, whose readmission within 30 days of discharge had been potentially preventable, and compared them to a sample of 50 sex- and age-matched patients who were not readmitted. PIMs were screened using the STOPP/START tool, developed for geriatric patients, and the PIM-Check tool, developed for internal medicine patients. The time needed to perform each patient's analysis was measured. A clinical pharmacist counted and evaluated each PIM detected, based on its clinical relevance to the individual patient's case. The rates of screened and validated PIMs involving readmitted and non-readmitted patients were compared.

Results

Across the whole population, PIM-Check and STOPP/START detected 1348 and 537 PIMs, respectively, representing 13.5 and 5.4 PIMs/patient. Screening time was substantially shorter with PIM-Check than with STOPP/START (4 vs 10 minutes, respectively). The clinical pharmacist judged that 45% and 42% of the PIMs detected using PIM-Check and STOPP/START, respectively, were clinically relevant to individual patients’ cases. No significant differences in the rates of detected and clinically relevant PIM were found between readmitted and non-readmitted patients.

What is new and conclusion
Internal medicine patients are frequently prescribed PIMs. PIM-Check's PIM detection rate was three times higher than STOPP/START's, and its screening time was shorter thanks to its electronic interface. Nearly half of the PIMs detected were judged to be non-clinically relevant, however, potentially overalerting the prescriber. These tools can, nevertheless, be considered useful in daily practice. Furthermore, the relevance of any PIM detected by these tools should always be carefully evaluated within the clinical context surrounding the individual patient.

Disponible en: https://onlinelibrary.wiley.com/doi/abs/10.1111/jcpt.12638

JAMDA: JOURNAL OF THE AMERICAN MEDICAL

Age, Sex, and Dose Effects of Nonbenzodiazepine Hypnotics on Hip Fracture in Nursing Home Residents

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Abstract
Objective
The Food and Drug Administration recommends a reduced dose of nonbenzodiazepine hypnotics in women, yet little is known about the age-, sex-, and dose-specific effects of these drugs on risk of hip fracture, especially among nursing home (NH) residents. We estimated the age-, sex-, and dose-specific effects of nonbenzodiazepine hypnotics on the rate of hip fracture among NH residents.
Design and Setting
Case-crossover study in US NHs.
Participants
A total of 691 women and 179 men with hip fracture sampled from all US long-stay NH residents.
Measurements
Measures of patient characteristics were obtained from linked Medicare and the Minimum Data Set (2007–2008). The outcome was hospitalization for hip fracture with surgical repair. We estimated rate ratios (RRs) and 95% confidence intervals (CIs) from conditional logistic regression models for nonbenzodiazepine hypnotics (vs nonuse) comparing 0 to 29 days before hip fracture (hazard period) with 60 to 89 and 120 to 149 days before hip fracture (control periods). We stratified analyses by age, sex, and dose.
Results
The average RR of hip fracture was 1.7 (95% CI 1.5–1.9) for any use. The RR of hip fracture was higher for residents aged ≥90 years vs <70 years (2.2 vs 1.3); however, the CIs overlapped. No differences in the effect of the hypnotic on risk of hip fracture were evident by sex. Point estimates for hip fracture were greater with high-dose versus low-dose hypnotics (RR 1.9 vs 1.6 for any use), but these differences were highly compatible with chance.
Conclusions
The rate of hip fracture in NH residents due to use of nonbenzodiazepine hypnotics was greater among older patients than among younger patients and, possibly, with higher doses than with lower doses. When clinicians are prescribing a nonbenzodiazepine hypnotic to any NH resident, doses of these drugs should be kept as low as possible, especially among those with advanced age.

Disponible en: http://www.jamda.com/article/S1525-8610(17)30538-8/fulltext