REVISIÓN BIBLIOGRÁFICA MARZO 2018: preselección de artículos

AGE AND AGEING

Z-drugs and risk for falls and fractures in older adults—a systematic review and meta-analysis

Nir Treves, Amichai Perlman, Lital Kolenberg, Geron Angham, Asaly Ilan Matok

Abstract

Objective

zolpidem, zopiclone, eszopiclone and zaleplon, also known as 'Z-drugs', are commonly used as alternatives to benzodiazepines (BZDs) to treat insomnia. Z-drugs are often perceived as safer than BZDs. We conducted a systematic review and meta-analysis evaluating the association between Z-drugs and fracutres, falls and injuries.

Methods

a systematic review was performed using MEDLINE, EMBASE and ClinicalTials.gov. Pooled effect-sizes were calculated comparing Z-drugs users with non-users, using fixed and random-effect models with corresponding 95% confidence of intervals (CI).

Results

we identified 14 eligible studies reporting on the association between Z-drugs and outcomes of interest. Z-Drugs were associated with a statistically significant increased risk for fractures, with evidence of considerable heterogeneity (OR = 1.63; 95% CI: 1.42–1.87; $I2$ = 90%; n = 830,877). Likewise, there was a trend suggesting a 2-fold increase in the odds for falls, however, this result was not statistically significant and there was evidence of considerable heterogeneity (OR = 2.40; 95% CI: 0.92–6.27; $I2$ = 95%; n = 19,505). In an analysis assessing the risk for injuries following exposure to zolpidem we found a statistically significant increased risk of injuries, with no evidence of heterogeneity (OR = 2.05; CI 95%: 1.95–2.15; $I2$ = 0; n = 160,502). Results were similar in sensitivity analyses, including analyses restricted to studies of high-quality, studies with control groups suffering from insomnia, and with specific Z-drugs.

Conclusion

our results indicate that Z-drugs are associated with an increased risk for fractures, and suggest a possible increased risk for falls and injuries as well. However, studies included were observational and susceptible to confounding. Physicians should consider these potential risks before prescribing these medications in older adults.

Disponible en: https://academic.oup.com/ageing/article/47/2/201/4564456

ARCHIVES OF GERONTOLOGY AND GERIATRICS

End-of-life care of elderly patients with dementia: A cross-sectional study of family carer decision-making

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Abstract

Background

Dementia syndromes pose a major worldwide challenge to public health. In terminal stage of dementia, carers are responsible for decision making in end-of-life treatment and there may be multiple factors that contribute to the choice of a palliative or invasive treatment.

Aim

To identify possible factors that influence the decision-making of family caregivers on implementing invasive or palliative interventions for people with end stage dementia.

Design

A structured interview with family caregivers of elderly patients addressing aspects of the following categories: elderly with dementia, caregiver, medical treatment history. Statistical analysis was performed to test whether there was a significant association between the carer's decision (invasive or palliative treatment) and the collected variables.

Settingand participants

The study was conducted in three hospitals in Brazil. Participants were family caregivers of inpatients with end stage dementia

Results

Most of caregivers chose not to perform invasive procedures. The factors with the greatest association with the decision for invasive care were: elderly with tracheostomy, dementia diagnosis for less than 2 years, caregiver's age less than 50 years, history of hospital admission in the last year, affirmation that interviewee would be surprised with the death of the elderly within 1 year and the denial that health care team has already explained about treatment options.

Conclusion

There were identified several factors related to the carer, the elderly person and their medical treatment that may influence the choice between palliative and invasive care for the elderly person with dementia.

Disponible en: https://www.sciencedirect.com/science/article/pii/S0167494317303345

BMC Geriatrics

Psychotropic medications in older people in residential care facilities and associations with quality of life: a cross-sectional study

Stephanie L. Harrison, Clare Bradley, Rachel Milte, Enwu Liu, Lisa Kouladjian O'Donnell, Sarah N. Hilmer and Maria Crotty

Abstract

Background

Psychotropic medications have been associated with many adverse outcomes in older people living in residential care. Home-like models of residential care may be preferable to traditional models of care and we hypothesized that this model may impact on the prevalence of psychotropic medications. The objectives were to: 1) examine associations between psychotropic medications and quality of life in older adults living in residential care facilities with a high prevalence of cognitive impairment and dementia and 2) determine if there was a difference in prevalence of psychotropic medications in facilities which provide a small group home-like model of residential care compared to a 'standard model' of care.

Methods

Participants included 541 residents from 17 residential aged care facilities in the Investigating Services Provided in the Residential Environment for Dementia (INSPIRED) study. Cross-sectional analyses were completed to examine the above objectives. Quality of life was measured with the dementia quality of life questionnaire (DEMQOL) and the EQ-5D-5L completed by the resident or a proxy.

Results
Overall, 70.8% (*n* = 380) of the population had been prescribed/dispensed at least one psychotropic medication in the 100 days prior to recruitment. An increased number of psychotropic medications was associated with lower quality of life according to DEMQOL-Proxy-Utility scores (β (SE): − 0.012 (0.006), *p* = 0.04) and EQ-5D-5L scores (− 0.024 (0.011), *p* = 0.03) after adjustment for resident-level and facility-level characteristics. Analysis of the individual classes of psychotropic medications showed antipsychotics were associated with lower DEMQOL-Proxy-Utility scores (− 0.030 (0.014), *p* = 0.03) and benzodiazepines were associated with lower EQ-5D-5L scores (− 0.059 (0.024), *p* = 0.01). Participants residing in facilities which had a home-like model of residential care were less likely to be prescribed psychotropic medications (OR (95% CI): 0.24 (0.12, 0.46), *p* < 0.001).
Conclusions
An increased number of psychotropic medications were associated with lower quality of life scores. These medications have many associated adverse effects and the use of these medications should be re-examined when investigating approaches to improve quality of life for older people in residential care. Home-like models of residential care may help to reduce the need for psychotropic medications, but further research is needed to validate these findings.

Disponible en: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-018-0752-0

Variation of polypharmacy in older primary care attenders occurs at prescriber level

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Abstract
Background
Polypharmacy is particularly important in older persons as they are more likely to experience adverse events compared to the rest of the population. Despite the relevance, there is a lack of studies on the possible association of patient, prescriber and practice characteristics with polypharmacy. Thus, the aim of this study was to determine the rate of polypharmacy among older persons attending public and private primary care clinics, and its association with patient, prescriber and practice characteristics.
Methods
We used data from The National Medical Care Survey (NMCS), a national cross-sectional survey of patients' visits to primary care clinics in Malaysia. A weighted total of 22,832 encounters of patients aged ≥65 years were analysed. Polypharmacy was defined as concomitant use of five medications and above. Multilevel logistic regression was performed to examine the association of polypharmacy with patient, prescriber and practice characteristics.
Results
A total of 20.3% of the older primary care attenders experienced polypharmacy (26.7%% in public and 11.0% in private practice). The adjusted odds ratio (OR) of polypharmacy were 6.37 times greater in public practices. Polypharmacy was associated with patients of female gender (OR 1.49), primary education level (OR 1.61) and multimorbidity (OR 14.21). The variation in rate of polypharmacy was mainly found at prescriber level.
Conclusion
Polypharmacy is common among older persons visiting primary care practices. Given the possible adverse outcomes, interventions to reduce the burden of polypharmacy are best to be directed at individual prescribers.

Disponible en: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-018-0750-2

Inpatient falls in older adults: a cohort study of antihypertensive prescribing pre- and post-fall

H. M. R. B. Omer, J. Hodson, S. K. Pontefract and U. Martin

Abstract

Background

Falls are common during hospital admissions and may occur more frequently in patients who are taking antihypertensive medications, particularly in the context of normal to low blood pressure. The review and adjustment of these medications is an essential aspect of the post-fall assessment and should take place as soon as possible after the fall.

Our aim was to investigate whether appropriate post-fall adjustments of antihypertensive medications are routinely made in a large National Health Service (NHS) Trust.

Methods

Inpatient records over an eight-month period were captured from an electronic prescribing system to identify older adults (≥80 years old) with normal/low blood pressures (< 140 mmHg systolic) who had a documented inpatient fall as these patients were considered to be at high risk of further falls. Prescribed antihypertensive medication on admission was then compared with the post-fall (within 24 h after the fall) and discharge prescriptions.

Results

A total of 146 patients were included in the analysis. Of those, 120 patients (82%) were taking the same number of antihypertensive medications in the 24 h after the fall as they were before; only 19 patients (13%) had a reduction in the number of medications and seven patients (5%) had an increase in medications during that period. Only 9% of the antihypertensive classes assessed were either stopped or reduced in dose immediately post-fall. In addition, 11 new antihypertensives were prescribed at this time.

At discharge, half of the patients ($n = 73$) remained on the same number of antihypertensive medication as on admission, 51 patients (35%) were on fewer antihypertensives and 22 (15%) were on more. Additionally, no changes were made to individual antihypertensives in 49% of prescriptions; 34% were stopped or reduced in dose but 38 new agents were started by the time of discharge. Angiotensin converting enzyme inhibitors and angiotensin II receptor blockers (ACEi/ARB) were the class of medications most commonly stopped or reduced (51%).

Conclusions

Antihypertensive prescriptions are frequently unchanged after an inpatient fall. Routine medication review needs to be part of post-fall assessments in hospital to reduce the risk of further falls.

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DRUGS AND AGING

Clinical and Economic Outcomes of Interventions to Reduce Antipsychotic and Benzodiazepine Use Within Nursing Homes: A Systematic Review

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Abstract

Background

Antipsychotic and benzodiazepine medications are widely used in nursing homes despite only modest efficacy and the risk of severe adverse effects. Numerous interventions have been implemented to reduce their use. However, the outcomes for the residents and staff and the economic impact on the healthcare system remain relatively understudied.

Objective
The aim was to examine the clinical and economic outcomes reported within interventions to reduce antipsychotic and/or benzodiazepine use in nursing homes.
Methods
Databases searched included PubMed, EMBASE, CINAHL, CENTRAL, Scopus, and ProQuest. We focussed on interventions with professional (e.g. education) and/or organisational (e.g. formation of multidisciplinary teams) components. Data were extracted from the papers that included clinical and/or economic outcomes. Two authors independently reviewed articles for eligibility and quality.
Results
Fourteen studies reported on clinical outcomes for the residents: 13 antipsychotic reduction studies and one study focussing exclusively on benzodiazepine reduction. There was substantial heterogeneity in the types of outcomes reported and the method of reporting. Change in behavioural and psychological symptoms was the most commonly reported outcome throughout the antipsychotic reduction interventions (*n* = 12 studies) and remained stable or improved in ten of 12 studies. Whilst improvements were seen in emotional responsiveness, measures of sleep, cognitive function, and subjective health score remained unchanged upon benzodiazepine reduction. No interventions included an economic analysis.
Conclusions
Efforts should be made to improve the consistency in reporting of clinical outcomes within interventions to reduce antipsychotic and/or benzodiazepine medications. Additionally, the economic impact of these interventions should be considered. Nonetheless, evidence suggests that interventions that reduce antipsychotic use are unlikely to have deleterious clinical effects. The clinical and economic effects of benzodiazepine reduction remain under-reported.

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Polypharmacy in Home Care in Europe: Cross-Sectional Data from the IBenC Study

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Abstract
Background
Home care (HC) patients are characterized by a high level of complexity, which is reflected by the prevalence of multimorbidity and the correlated high drug consumption. This study assesses prevalence and factors associated with polypharmacy in a sample of HC patients in Europe.
Methods
We conducted a cross-sectional analysis on 1873 HC patients from six European countries participating in the Identifying best practices for care-dependent elderly by Benchmarking Costs and outcomes of community care (IBenC) project. Data were collected using the interResident Assessment Instrument (interRAI) instrument for HC. Polypharmacy status was categorized into three groups: non-polypharmacy (0–4 drugs), polypharmacy (5–9 drugs), and excessive polypharmacy (≥ 10 drugs). Multinomial logistic regressions were used to identify variables associated with polypharmacy and excessive polypharmacy.
Results
Polypharmacy was observed in 730 (39.0%) HC patients and excessive polypharmacy in 433 (23.1%). As compared with non-polypharmacy, excessive polypharmacy was directly associated with chronic disease but also with female sex (odds ratio [OR] 1.58; 95% confidence interval [CI] 1.17–2.13), pain (OR 1.51; 95% CI 1.15–1.98), dyspnea (OR 1.37; 95% CI 1.01–1.89), and falls (OR 1.55; 95% CI 1.01–2.40). An inverse association with excessive polypharmacy was shown for age (OR 0.69; 95% CI 0.56–0.83).

Conclusions
Polypharmacy and excessive polypharmacy are common among HC patients in Europe. Factors associated with polypharmacy status include not only co-morbidity but also specific symptoms and age.

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JOURNAL OF THE AMERICANS GERIATRIC SOCIETY

Telephone Follow-Up for Older Adults Discharged to Home from the Emergency Department: A Pragmatic Randomized Controlled Trial

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Abstract

Background/Objectives
Telephone calls after discharge from the emergency department (ED) are increasingly used to reduce 30-day rates of return or readmission, but their effectiveness is not established. The objective was to determine whether a scripted telephone intervention by registered nurses from a hospital-based call center would decrease 30-day rates of return to the ED or hospital or of death.
Design
Randomized, controlled trial from 2013 to 2016.
Setting
Large, academic medical center in the southeast United States.
Participants
Individuals aged 65 and older discharged from the ED were enrolled and randomized into intervention and control groups (N = 2,000).
Intervention
Intervention included a telephone call from a nurse using a scripted questionnaire to identify obstacles to elements of successful care transitions: medication acquisition, postdischarge instructions, and obtaining physician follow-up. Control subjects received a satisfaction survey only.
Measurements
Primary outcome was return to the ED, hospitalization, or death within 30 days of discharge from the ED.
Results
Rate of return to the ED or hospital or death within 30 days was 15.5% (95% confidence interval (CI) = 13.2–17.8%) in the intervention group and 15.2% (95% CI = 12.9–17.5%) in the control group (P = .86). Death was uncommon (intervention group, 0; control group, 5 (0.51%), 95% CI = 0.06–0.96%); 12.2% of intervention subjects (95% CI = 10.1–14.3%) and 12.5% of control subjects (95% CI = 10.4–14.6%) returned to the ED, and 9% of intervention subjects (95% CI = 7.2–10.8%) and 7.4% of control subjects (95% CI = 5.8–9.0%) were hospitalized within 30 days.
Conclusion
A scripted telephone call from a trained nurse to an older adult after discharge from the ED did not reduce ED or hospital return rates or death within 30 days.

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REVISTA ESPAÑOLA DE GERIATRÍA Y GERONTOLOGÍA

Prognostic value of assessment tools on elderly patients with chronic advanced disease and end of life, admitted to an intermediate care centre

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Resumen

Objetivo

Aplicar 3instrumentos de evaluación de enfermedad avanzada en ancianos ingresados en un centro sociosanitario y evaluar su relación con la mortalidad.

Métodos

Se aplicaron los instrumentos NECPAL, índice PROFUND e índice de comorbilidad de Charlson a 87 pacientes.

Resultados

El instrumento NECPAL identificó a 31 pacientes (35,6%) en situación de necesidad de atención paliativa; según el índice PROFUND, 45 (54,7%) tenían riesgo alto/muy alto de mortalidad (≥7 puntos) y según el índice de Charlson, 31 (35,6%) tenían carga de morbilidad alta (≥4 puntos).

Pacientes NECPAL positivos: el 80,5% tenían puntuación ≥7 en índice PROFUND y 48,3% un Charlson ≥ 4; dichas proporciones fueron 34,4 y 28,5% en los NECPAL negativos ($p<0,001$ y $p\leq0,06$, respectivamente).

Correlaciones entre los 3instrumentos: cuantitativas (Spearman): número de respuestas NECPAL con PROFUND ($r=0,57$; $p<0,001$); con Charlson ($r=0,214$; $p=0,047$) y entre PROFUND y Charlson ($r=0,157$; $p=0,148$).

Cualitativas (kappa) NECPAL (positivo/negativo) con PROFUND (corte 6/7) (0,40; $p<0,001$), con Charlson (corte 3/4) (0,19; $p=0,080$) y entre PROFUND y Charlson (0,08; $p=0,399$).

Predicción de mortalidad (área bajo la curva): NECPAL 3 meses 0,81 (IC: 0,62-1,00); 6 meses 0,71 (IC: 0,53-0,89) y 12 meses 0,67 (IC: 0,52-0,82). PROFUND 3 meses 0,71 (IC: 0,50-0,91); 6 meses 0,73 (IC: 0,58-0,87) y 12 meses 0,69 (IC: 0,57-0,81). Charlson 3 meses 0,72 (IC: 0,52-0,91); 6 meses 0,62 (IC: 0,45-0,80) y 12 meses 0,64 (IC: 0,50-0,78).

Conclusiones

Los 3instrumentos se relacionaron de forma significativa con una mayor mortalidad. La concordancia entre los resultados de los distintos instrumentos fue baja

Disponible en: http://www.elsevier.es/es-revista-revista-espanola-geriatria-gerontologia-124-articulo-valor-pronostico-los-instrumentos-evaluacion-S0211139X17301464

BRITISH JOURNAL OF CLINICAL PHARMACOLOGY

Drug burden index to define the burden of medicines in older adults with intellectual disabilities: An observational cross-sectional study

Juliette O'Connell, Éilish Burke, Niamh Mulryan, Claire O'Dwyer, Clare Donegan, Philip McCallion, Mary McCarron, Martin C. Henman, Máire O'Dwyer

Abstract

Aims

The drug burden index (DBI) is a dose-related measure of anticholinergic and sedative drug exposure. This cross-sectional study described DBI in older adults with intellectual disabilities (ID) and the most frequently reported therapeutic classes contributing to DBI and examined associations between higher DBI scores and potential adverse effects as well as physical function.

Methods

This study analysed data from Wave 2 (2013/2014) of the Intellectual Disability Supplement to the Irish Longitudinal Study on Ageing (IDS-TILDA), a representative study on the ageing of people with ID in Ireland. Self- and objectively-reported data were collected on medication use and physical health, including health conditions. The Barthel index was the physical function measure.

Results

The study examined 677 individuals with ID, of whom 644 (95.1%) reported taking medication and 78.6% (n = 532) were exposed to medication with anticholinergic and/or sedative activity. 54.2% (n = 367) were exposed to high DBI score (≥1). Adjusted multivariate regression analysis revealed no significant association between DBI score and daytime dozing, constipation or falls. After adjusting for confounders (sex, age, level of ID, comorbidities, behaviours that challenge, history of falls), DBI was associated with significantly higher dependence in the Barthel index (P = 0.002).

Conclusions

This is the first time DBI has been described in older adults with ID. Scores were much higher than those observed in the general population and higher scores were associated with higher dependence in Barthel index activities of daily living.

Disponible en: https://bpspubs.onlinelibrary.wiley.com/doi/10.1111/bcp.13479

Incident diuretic drug use and adverse respiratory events among older adults with chronic obstructive pulmonary disease

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Abstract

Aims

Diuretic drugs may theoretically improve respiratory health outcomes in chronic obstructive pulmonary disease (COPD) through several possible mechanisms, but they might also lead to respiratory harm. We evaluated the association of incident oral diuretic drug use with respiratory-related morbidity and mortality among older adults with COPD.

Methods

This was a population-based, retrospective cohort study using health administrative data from Ontario, Canada, for the period 2008–2013. We identified adults aged 66 years and older with nonpalliative COPD using a validated algorithm. Respiratory-related morbidity and mortality were evaluated within 30 days of incident oral diuretic drug use compared to nonuse using Cox proportional hazard regression and applying inverse probability of treatment weighting using the propensity score to minimize confounding.

Results

Out of 99 766 individuals aged 66 years and older with COPD identified, incident diuretic receipt occurred in 51.7%. Relative to controls, incident diuretic users had significantly increased rates for hospitalization for COPD or pneumonia [hazard ratio (HR) 1.22, 95% confidence interval (CI) 1.07–1.40], as well as more emergency room visits for COPD or pneumonia (HR 1.35, 95% CI 1.18–1.56), COPD or pneumonia-related mortality (HR 1.41; 95% CI 1.04–1.92) and all-cause mortality (HR 1.20, 95% CI 1.06–1.35). The increased respiratory-related morbidity and mortality observed were specifically as a result of loop diuretic use.

Conclusions
Incident diuretic drugs, and more specifically loop diuretics, were associated with increased rates of respiratory-related morbidity and mortality among older adults with nonpalliative COPD. Further studies are needed to determine if this association is causative or due to unresolved confounding.

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EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY

Longitudinal patterns of potentially inappropriate prescribing in early old-aged people

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Abstract
Purpose
It is contentious whether potentially inappropriate prescribing (PIP) is predominantly a phenomenon of late life or whether it has its origins in early old age. This study examined the pattern of PIP in an early old-aged population over 5 years.
Methods
Secondary data analysis of a population-based primary care cohort, of patients aged 60–74 years. Medication data were extracted from electronic patient records in addition to information on comorbidities and demographics. Explicit START criteria (PPOs) and STOPP criteria (PIMs) were used to identify PIP. Generalised estimating equations were used to describe trends in PIP over time and adjusted for age, gender and number of medicines.
Results
A total of 978 participants (47.8%) aged 60–74 years were included from the cohort. At baseline, PPOs were detected in 31.2% of patients and PIMs were identified in 35.6% at baseline. Prevalence of PPOs and PIMs increased significantly over time (OR 1.08, 95% CI 1.07; 1.09 and OR 1.04, 95% CI 1.0; 1.06, respectively). A higher number of medicines and new diagnoses were associated with the increasing trend in both PPO and PIM prevalence observed over time, independent of PPOs and PIMs triggered by drug combinations.
Conclusions
Potentially inappropriate prescribing is highly prevalent among early old-aged people in primary care and increases as they progress to more advanced old age, suggesting that routine application of STOPP/START criteria in this population would significantly improve medication appropriateness.

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Inter-rater reliability of STOPPFrail [Screening Tool of Older Persons Prescriptions in Frail adults with limited life expectancy] criteria amongst 12 physicians

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Abstract
Purpose
STOPPFrail is an explicit tool, developed by Delphi consensus, to assist physicians with deprescribing medications in frail older adults with poor survival prognosis. This study aimed to determine the inter-rater reliability (IRR), amongst physicians, of STOPPFrail application.

Methods
Twenty clinical cases were collated to represent frail older patients. Eighteen cases met STOPPFrail inclusion criteria. They had a mean age of 79.5 (SD6) years and a median of 7 (IQR6–8.25) comorbidities and were prescribed a median of 9 (IQR7.75–11.25) medications. Two of the STOPPFrail originators reached complete agreement (gold standard) in determining 91 of 165 medications (55.2%) as inappropriate. Twelve physicians (6 geriatricians, 3 general practitioners and 3 palliative care physicians) independently applied STOPPFrail criteria. IRR between physicians and gold standard (GS) assessment was determined using Cohen's kappa statistic.
Results
Eighteen of the 20 cases that met STOPPFrail inclusion criteria were correctly identified by 9 of 12 physicians (75%). The average time taken per clinical case was 2.7 (SD0.94) minutes. The kappa co-efficient between physicians and GS assessment ranged from 0.71 (substantial) to 0.86 (good), with a mean kappa value of 0.758 (SD0.059). The Fleiss kappa coefficients between GS assessment and geriatricians, GPs and palliative care physicians were 0.80 (SD0.6), 0.77 (SD0.9) and 0.75 (SD0.1), respectively. No significant difference was noted, between groups or between participants within groups, as determined by one-way ANOVA, (df (2, 9) = 0.712, p = 0.516).
Conclusions
IRR of STOPPFrail criteria between physicians, practising in different specialties, is substantial, despite no prior knowledge of the criteria.

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Changes in prescription patterns in older hospitalized patients: the impact of FORTA on disease-related over- and under-treatments

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Abstract
Purpose
Physicians often face difficulties in choosing appropriate medications for multimorbid older people. The FORTA (Fit for the Aged) classification (A: absolutely, B: beneficial, C: careful, D: don't) was proposed as a clinical tool for improving the quality of drug treatment in the aged. As an implicit tool, FORTA has been shown to aid medication optimization and improve clinical end points in the VALFORTA trial. In this prospective randomized controlled study, 207 older hospitalized patients received standard geriatric treatment and 202 patients received FORTA-guided treatment.
Methods
Here, changes of drug prescriptions at the anatomical-therapeutic-chemical system (ATC) level were evaluated separately for important diagnoses in descriptive analyses; over- and under-treatment rates were compared between groups.
Results
At the individual drug/drug class level related to all important diagnoses, the application of FORTA significantly improved under-treatments for 12 drugs/drug classes (e.g., ACE inhibitors to treat arterial hypertension) and over-treatments for 7 drugs/drug classes (e.g., proton pump inhibitors to treat gastroesophageal reflux disease).
Conclusions
FORTA representing the first combined positive/negative labeling approach at the individual drug level aids the optimization of drug treatment in older people as detected for drugs/drug classes at the ATC level in important indications. FORTA is effective in addressing over- and under-treatments even if analyzed for smaller subgroups of VALFORTA.

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Development and pilot testing of PHARAO—a decision support system for pharmacological risk assessment in the elderly

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Abstract

Purpose

The aims of this study are to describe the development of PHARAO (Pharmacological Risk Assessment Online), a decision support system providing a risk profile for adverse events, associated with combined effects of multiple medicines, and to present data from a pilot study, testing the use, functionality, and acceptance of the PHARAO system in a clinical setting.

Methods

About 1400 substances were scored in relation to their risk to cause any of nine common and/or serious adverse effects. Algorithms for each adverse effect score were developed to create individual risk profiles from the patient's list of medication. The system was tested and integrated to the electronic medical record, during a 4-month period in two geriatric wards and three primary healthcare centers, and a questionnaire was answered by the users before and after the test period.

Results

A total of 732 substances were tagged with one or more of the nine risks, most commonly with the risk of sedation or seizures. During the pilot, the system was used 933 times in 871 patients. The most common signals generated by PHARAO in these patients were related to the risks of constipation, sedation, and bleeding. A majority of responders considered PHARAO easy to use and that it gives useful support in performing medication reviews.

Conclusions

The PHARAO decision support system, designed as a complement to a database on drug-drug interactions used nationally, worked as intended and was appreciated by the users during a 4-month test period. Integration aspects need to be improved to minimize unnecessary signaling.

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PHARMACOEPIDEMIOLOGY AND DRUG SAFETY

Relevance of frailty to mortality associated with the use of antipsychotics among community-residing older adults with impaired cognition

Colleen J. Maxwell Michael A. Campitelli David B. Hogan Christina Diong Peter C. Austin Joseph E. Amuah Kate Lapane Dallas P. Seitz Sudeep S. Gill Andrea Gruneir Walter P. Wodchis Susan E. Bronskill

Abstract

Purpose

To examine the association between new antipsychotic use and mortality over 6 months among community-based older adults with cognitive impairment, and variation in risk by frailty and sex.

Methods

We conducted a retrospective cohort study of older (aged 66+) home care clients in Ontario, Canada, using linked administrative health and clinical databases. Included were clients with dementia and/or significant cognitive impairment assessed during April 2008 to March 2013. Frailty was defined using a validated 72-item index. Exposed were those newly dispensed an antipsychotic in the 6 months post cohort entry, with no such claims in the year prior to drug index date. Two-stage matching defined unexposed clients and their index date (matching on age, sex, frailty, assessment year, and propensity score). Outcome was time to death following index date. Cause-specific hazards models were used, and number needed to harm at 6 months was estimated from cumulative incidence function curves.

Results
Among 4955 matched exposed-unexposed pairs, new antipsychotic users showed a significantly increased hazard of mortality at 1, 3, and 6 months relative to unexposed, with the highest risk observed in the first month (hazard ratio [HR] = 2.08 [95% CI, 1.79-2.43]). At 1 month, risk was significantly higher for robust (HR = 3.72 [95% CI, 2.45-5.66]) vs frail (HR = 1.74 [95% CI, 1.40-2.17], P = .002) clients. The number needed to harm was 22.7 and did not vary by frailty but was lower for men (14.9) than for women (35.0).
Conclusions
Risk of antipsychotic-associated mortality was highest in the first month following exposure, varied significantly by client frailty, and was greater among men than among women.

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Tamsulosin and the risk of dementia in older men with benign prostatic hyperplasia

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Abstract
Purpose
Clinicians use tamsulosin, an α1-adrenoceptor antagonist, to manage symptomatic benign prostatic hyperplasia (BPH). Because α1-adrenoceptors are also present in the brain, the potential exists for adverse effects on cognitive functions. We explored the association between tamsulosin use and dementia risk.
Methods
We used Medicare data (2006–2012) to conduct a cohort study among patients aged ≥65 years and diagnosed with BPH. Men taking tamsulosin (n = 253 136) were matched at a 1:1 ratio using propensity-scores to each of 6 comparison cohorts: patients who used no BPH-medication (n = 180 926), and patients who used the following alternative-BPH-medications: doxazosin (n = 28 581), terazosin (n = 23 858), alfuzosin (n = 17 934), dutasteride (n = 34 027), and finasteride (n = 38 767). Assessment began following the first fill of BPH-medication to identify incident dementia by ICD-9 diagnosis codes. We estimated hazard ratios (HR) and 95% confidence intervals (CI) for dementia using Cox proportional hazard regression for each of the 6 propensity-score-matched cohort-pairs.
Results
The median follow-up period for all cohorts was 19.8 months. After propensity-score matching, the tamsulosin cohort had an incidence of dementia of 31.3/1000 person-years compared with only 25.9/1000 person-years in the no-BPH-medication cohort. The risk of dementia was significantly higher in the tamsulosin cohort, when compared with the no-BPH-medication cohort (HR [95% CI]: 1.17 [1.14, 1.21]) and each of the alternative-BPH-medication cohorts: doxazosin (1.20 [1.12, 1.28]), terazosin (1.11 [1.04, 1.19]), alfuzosin (1.12 [1.03, 1.22]), dutasteride (1.26 [1.19, 1.34]), and finasteride (1.13 [1.07, 1.19]). The significance of these findings persisted in sensitivity analyses.
Conclusion
Tamsulosin may increase the risk of dementia in older men with BPH.

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