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REVISIÓN BIBLIOGRÁFICA JUNIO 2023
Selección de artículos

REVISTAS GERIÁTRICAS

Age and Ageing

Development and validation of an international preoperative risk assessment model for postoperative delirium

Benjamin T Dodsworth, Kelly Reeve, Lisa Falco, Tom Hueting, Behnam Sadeghirad, Lawrence Mbuagbaw, Nicolai Goettel, Nayeli Schmutz Gelsomino

Abstract

Background

Postoperative delirium (POD) is a frequent complication in older adults, characterised by disturbances in attention, awareness and cognition, and associated with prolonged hospitalisation, poor functional recovery, cognitive decline, long-term dementia and increased mortality. Early identification of patients at risk of POD can considerably aid prevention.

Methods

We have developed a preoperative POD risk prediction algorithm using data from eight studies identified during a systematic review and providing individual-level data. Ten-fold cross-validation was used for predictor selection and internal validation of the final penalised logistic regression model. The external validation used data from university hospitals in Switzerland and Germany.

Results

Development included 2,250 surgical (excluding cardiac and intracranial) patients 60 years of age or older, 444 of whom developed POD. The final model included age, body mass index, American Society of Anaesthesiologists (ASA) score, history of delirium, cognitive impairment, medications, optional C-reactive protein (CRP), surgical risk and whether the operation is a laparotomy/thoracotomy. At internal validation, the algorithm had an AUC of 0.80 (95% CI: 0.77–0.82) with CRP and 0.79 (95% CI: 0.77–0.82) without CRP. The external validation consisted of 359 patients, 87 of whom developed POD. The external validation yielded an AUC of 0.74 (95% CI: 0.68–0.80).

Conclusions

The algorithm is named PIPRA (Pre-Interventional Preventive Risk Assessment), has European conformity (CE) certification, is available at http://pipra.ch/ and is accepted for clinical use. It can be used to optimise patient care and prioritise interventions for vulnerable patients and presents an effective way to implement POD prevention strategies in clinical practice.

Disponible en: https://doi.org/10.1093/ageing/afad086

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DRUGS AND AGING

Dosage Optimization of Digoxin in Older Patients with Heart Failure and Chronic Kidney Disease: A Population Pharmacokinetic Analysis

Zhong-Qiu Lin, Ling Guo, Li-Min Zhang, Jie-Jiu Lu & Xia Jiang

Abstract

Background

Renal function is an important index for digoxin dose adjustment, especially in patients with chronic kidney disease (CKD). Decreased glomerular filtration rate is common in older patients with cardiovascular disease.

Objective

The aim of this study was to establish a digoxin population pharmacokinetic model in older patients with heart failure and CKD and to optimize the digoxin dose strategy.

Methods

Older patients with heart failure and CKD aged > 60 years from January 2020 to January 2021 and who had an estimated glomerular filtration rate (eGFR) < 90 mL/min/1.73 m2 or urine protein production were enrolled in this retrospective study. Population pharmacokinetic analysis and Monte Carlo simulations (n = 1000) were performed using NONMEN software. The precision and stability of the final model were analyzed by graphical and statistical methods.

Results

Overall, 269 older patients with heart failure were enrolled. A total of 306 digoxin concentrations were collected, with a median value of 0.98 ng/mL (interquartile range [IQR] 0.62–1.61, range 0.04–4.24). The median age was 68 years (IQR 64–71, range 60–94) and eGFR was 53.6 mL/min/1.73 m2 (IQR 38.1–65.2, range 11.4–89.8). A one-compartment model with first-order elimination was developed to describe the digoxin pharmacokinetics. Typical values for clearance and volume of distribution were 2.67 L/h and 36.9 L, respectively. Dosage simulations were stratified by eGFR and metoprolol. Doses of 62.5 and 125 µg were recommended for older patients with eGFR < 60 mL/min/1.73 m2.

Conclusions

A population pharmacokinetic model of digoxin in older patients with heart failure and CKD was established in this study. A novel digoxin dosage strategy was recommended in this vulnerable population.

Disponible en: https://doi.org/10.1007/s40266-023-01026-4

Safety and Tolerability of Antimicrobial Agents in the Older Patient

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Abstract

Older patients are at high risk of infections, which often present atypically and are associated with high morbidity and mortality. Antimicrobial treatment in older individuals with infectious diseases represents a clinical challenge, causing an increasing burden on worldwide healthcare systems; immunosenescence and the coexistence of multiple comorbidities determine complex polypharmacy regimens with an increase in drug–drug interactions and spread of multidrug-resistance infections. Aging-induced pharmacokinetic and pharmacodynamic changes can additionally increase the risk of inappropriate drug dosing, with underexposure that is associated with antimicrobial resistance and overexposure that may lead to adverse effects and poor adherence because of low tolerability. These issues need to be considered when starting antimicrobial prescriptions. National and international efforts have been made towards the implementation of antimicrobial stewardship (AMS) interventions to help clinicians improve the appropriateness and safety of antimicrobial prescriptions in both acute and long-term care settings. AMS programs were shown to decrease consumption of antimicrobials and to improve safety in hospitalized patients and older nursing home residents. With the abundance of antimicrobial prescriptions and the recent emergence of multidrug resistant pathogens, an in-depth review of antimicrobial prescriptions in geriatric clinical practice is needed. This review will discuss the special considerations for older individuals needing antimicrobials, including risk factors that shape risk profiles in geriatric populations as well as an evidence-based description of antimicrobial-induced adverse events in this patient population. It will highlight agents of concern for this age group and discuss interventions to mitigate the effects of inappropriate antimicrobial prescribing.

Key Points

Older patients are at high risk of infections and adverse events due to antimicrobial medications.
Inappropriate antimicrobial use contributes to complications, mainly due to drug underexposure that leads to antimicrobial resistance, and drug overexposure that leads to adverse effects and poor adherence because of low drug tolerability.
Antimicrobial stewardship interventions addressing adherence to guidelines, dosage adjustment in liver and kidney dysfunction, as well as formulary adaptations and therapeutic drug monitoring can be lifesaving and improve the safety and effectiveness of antimicrobial treatments.

Disponible en: https://doi.org/10.1007/s40266-023-01019-3

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EUROPEAN GERIATRIC MEDICINE

Psychotropic medication use and future unexplained and injurious falls and fracture amongst community-dwelling older people: data from TILDA

Eleanor Gallagher, Mustafa Mehmood, Amanda Lavan, Rose Anne Kenny & Robert Briggs

Abstract

Purpose

Psychotropic medications (antidepressants, anticholinergics, benzodiazepines, 'Z'-drugs and antipsychotics) are frequently identified as Falls Risk Increasing Drugs. The aim of this study is to clarify the association of psychotropic medication use with future falls/fracture amongst community-dwelling older people.

Methods

Participants ≥ 65 years from TILDA were included and followed from Waves 1 to 5 (8-year follow-up). Incidence of falls (total falls/unexplained/injurious) and fracture was by self-report; unexplained falls were falls not caused by a slip/trip, with no apparent cause. Poisson regression models reporting incidence rate ratios (IRR) assessed the association between medications and future falls/fracture, adjusted for relevant covariates.

Results

Of 2809 participants (mean age 73 years), 15% were taking ≥ 1 psychotropic medication. During follow-up, over half of participants fell, with 1/3 reporting injurious falls, over 1/5 reporting unexplained falls and almost 1/5 reporting fracture. Psychotropic medications were independently associated with falls [IRR 1.15 (95% CI 1.00–1.31)] and unexplained falls [IRR 1.46 (95% CI 1.20–1.78)]. Taking ≥ 2 psychotropic medications was further associated with future fracture (IRR 1.47 (95% CI 1.06–2.05)]. Antidepressants were independently associated with falls [IRR 1.20 (1.00–1.42)] and unexplained falls [IRR 2.12 (95% CI 1.69–2.65)]. Anticholinergics were associated with unexplained falls [IRR 1.53 (95% CI 1.14–2.05)]. 'Z'-drug and benzodiazepine use were not associated with falls or fractures.

Conclusion

Psychotropic medications, particularly antidepressants and anticholinergic medications, are independently associated with falls and fractures. Regular review of ongoing need for these medications should therefore be central to the comprehensive geriatric assessment.

Disponible en: https://doi.org/10.1007/s41999-023-00786-x

Clinical profile of trazodone users in a multisetting older population: data from the Italian GeroCovid Observational study

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Abstract

Background and objectives

Depression is highly prevalent in older adults, especially in those with dementia. Trazodone, an antidepressant, has shown to be effective in older patients with moderate anxiolytic and hypnotic activity; and a common off-label use is rising for managing behavioral and psychological symptoms of dementia (BPSD). The aim of the study is to comparatively assess the clinical profiles of older patients treated with trazodone or other antidepressants.

Methods

This cross-sectional study involved adults aged ≥ 60 years at risk of or affected with COVID-19 enrolled in the GeroCovid Observational study from acute wards, geriatric and dementia-specific outpatient clinics, as well as long-term care facilities (LTCF). Participants were grouped according to the use of trazodone, other antidepressants, or no antidepressant use.

Results

Of the 3396 study participants (mean age 80.6 ± 9.1 years; 57.1% females), 10.8% used trazodone and 8.5% others antidepressants. Individuals treated with trazodone were older, more functionally dependent, and had a higher prevalence of dementia and BPSD than those using other antidepressants or no antidepressant use. Logistic regression analyses found that the presence of BPSD was associated with trazodone use (odds ratio (OR) 28.4, 95% confidence interval (CI) 18-44.7 for the outcome trazodone vs no antidepressants use, among participants without depression; OR 2.17, 95% CI 1.05-4.49 for the outcome trazodone vs no antidepressants use, among participants with depression). A cluster analysis of trazodone use identified three clusters: cluster 1 included mainly women, living at home with assistance, multimorbidity, dementia, BPSD, and depression; cluster 2 included mainly institutionalized women, with disabilities, depression, and dementia; cluster 3 included mostly men, often living at home unassisted, with better mobility performance, fewer chronic diseases, dementia, BPSD, and depression.

Discussion

Adults admitted to LTCF or living at home. Clinical conditions associated with its prescription included depression as well as BPSD.

Disponible en: https://doi.org/10.1007/s41999-023-00790-1

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Journal of American Geriatrics Society

Pragmatic evaluation of events and benefits of lipid lowering in older adults (PREVENTABLE): Trial design and rationale

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Abstract

Whether initiation of statins could increase survival free of dementia and disability in adults aged ≥75 years is unknown. PREVENTABLE, a double-blind, placebo-controlled randomized pragmatic clinical trial, will compare high-intensity statin therapy (atorvastatin 40 mg) with placebo in 20,000 community-dwelling adults aged ≥75 years without cardiovascular disease, disability, or dementia at baseline. Exclusion criteria include statin use in the prior year or for >5 years and inability to take a statin. Potential participants are identified using computable phenotypes derived from the electronic health record and local referrals from the community. Participants will undergo baseline cognitive testing, with physical testing and a blinded lipid panel if feasible. Cognitive testing and disability screening will be conducted annually. Multiple data sources will be queried for cardiovascular events, dementia, and disability; survival is site-reported and supplemented by a National Death Index search. The primary outcome is survival free of new dementia or persisting disability. Co-secondary outcomes are a composite of cardiovascular death, hospitalization for unstable angina or myocardial infarction, heart failure, stroke, or coronary revascularization; and a composite of mild cognitive impairment or dementia. Ancillary studies will offer mechanistic insights into the effects of statins on key outcomes. Biorepository samples are obtained and stored for future study. These results will inform the benefit of statins for increasing survival free of dementia and disability among older adults. This is a pioneering pragmatic study testing important questions with low participant burden to align with the needs of the growing population of older adults.

Disponible en: https://doi.org/10.1111/jgs.18312

Vitamin D supplementation and cognition—Results from analyses of the D-Health trial

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Abstract

Background

Observational studies have consistently found a link between low serum 25-hydroxyvitamin D concentration and higher risk of cognitive impairment. Results from randomized controlled trials have been mixed, and few have been conducted in the general population.

Methods

We recruited 21,315 community-dwelling Australians aged between 60 and 84 years to participate in the D-Health Trial, a randomized, double-blind, placebo-controlled trial. The intervention was monthly oral doses of 60,000 international units of vitamin D or placebo for 5 years. We assessed cognitive function in a randomly sampled group of participants aged ≥70 years using the Telephone Interview for Cognitive Status (TICS) at 2 and 5 years after randomization. The primary outcome for this analysis was TICS score; the secondary outcome was the proportion of people who had cognitive impairment (defined as TICS score ≤25). We analyzed data using mixed models (linear and logistic).

Results

We interviewed 3887 participants at year 2 and 3614 participants at year 5. The mean TICS score at these time points was 32.3 and 32.2, respectively. Vitamin D supplementation did not affect cognitive function as measured by TICS score (mean difference between vitamin D and placebo groups 0.04; 95% CI −0.14 to 0.23), or alter risk of cognitive impairment (odds ratio 1.00; 95% CI 0.75 to 1.33).

Conclusions

Monthly bolus doses of vitamin D supplementation neither enhanced nor hindered cognitive function among older adults. Population-wide vitamin D supplementation of older adults that are largely vitamin D replete is unlikely to substantially benefit cognition.

Disponible en: https://doi.org/10.1111/jgs.18247

REVISTAS FARMACÉUTICAS

American Journal of Health System Pharmacist

Comparison of hospitalization costs for the same adverse reaction associated with different medications

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Abstract

Purpose

Costs of hospitalization due to severe adverse drug reactions (ADRs) were previously estimated within the Veterans Health Administration (VHA), but additional analyses are needed to infer potential interventions to mitigate these negative outcomes. The objective of this study was to compare specific adverse reaction–related hospitalization costs between medications with similar indications.

Methods

Mean hospitalization costs associated with the same ADR symptom were compared for different drugs with similar indications using adjusted generalized linear models with a Bonferroni correction for multiple comparisons as well as a gamma distribution.

Results

Overall, hospitalization costs between medications with similar indications were not significantly different for specific adverse reactions. However, gastrointestinal hemorrhage–associated costs were higher for warfarin versus nonsteroidal anti-inflammatory drugs (model estimate of mean cost, $18,114 [range of lower and upper model estimates, $12,522-$26,202] vs $14,255 [estimate range, $9,710-$20,929]). Similarly, the estimated mean hospitalization cost associated with angioedema was higher for losartan versus lisinopril or lisinopril/hydrochlorothiazide: $14,591 (range, $9467-$22,488) versus $8,935 (range, $6,301-$12,669) and $8,022 (range, $5,424-$11,865), respectively.

Conclusion

Although we found few differences in the cost of hospitalization when comparing drugs with similar indications and the same adverse reaction, there were specific drug-ADR pairs that merit attention and consideration of interventions to improve safe and appropriate medication use. Evaluation of the effect of those interventions on the incidence of ADRs is an area for future study.

Disponible en: https://doi.org/10.1093/ajhp/zxad060

Therapeutic review: The role of tranexamic acid in management of traumatic brain injury, nontraumatic intracranial hemorrhage, and aneurysmal subarachnoid hemorrhage

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Abstract

Disclaimer

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Purpose

To summarize current literature evaluating tranexamic acid in the management of intracranial bleeding associated with traumatic and nontraumatic brain injuries and implications for clinical practice.

Summary

Intracranial hemorrhage, regardless of etiology, is associated with high morbidity and mortality. Tranexamic acid is an antifibrinolytic with anti-inflammatory properties shown to reduce mortality in trauma patients with extracranial injuries. In traumatic brain injury, a large randomized trial found no difference in outcomes when tranexamic acid was compared to placebo; however, subgroup analyses suggested that it may reduce head injury–related mortality in the context of mild-to-moderate injury if treatment occurs within 1 hour of symptom onset. More recent out-of-hospital data have disputed these findings and even suggested harm in severely injured patients. In spontaneous, nontraumatic intracranial hemorrhage, treatment with tranexamic acid did not result in a difference in functional status; however, rates of hematoma expansion, even though modest, were significantly reduced. In aneurysmal subarachnoid hemorrhage, tranexamic acid may prevent rebleeding, but has not led to improved outcomes or reduced mortality, and there is concern for increased incidence of delayed cerebral ischemia. Overall, tranexamic acid has not been shown to result in increased risk of thromboembolic complications across these classes of brain injury.

Conclusion

Despite its favorable safety profile overall, tranexamic acid does not seem to improve functional outcomes and cannot be routinely recommended. More data are needed to determine which head injury subpopulations are most likely to benefit from tranexamic acid and which patients are at increased risk for harm.

Disponible en: https://doi.org/10.1093/ajhp/zxad134

British Journal of Clinical Pharmacy

Improving the spontaneous reporting of suspected adverse drug reactions: An overview of systematic reviews

Philip Alexander Routledge, Robert Bracchi

Abstract

Aim

To conduct an overview of systematic reviews examining interventions to stimulate spontaneous reporting of suspected adverse drug reactions (ADRs) by healthcare professionals (HCPs) and/or patients/carers.

Methods

Systematic reviews published since 1 January 2000 were identified and the included publications categorized in relation to the 4Es (education, engineering, economics and enforcement).

Results

Almost all studies were aimed at HCPs. Educational initiatives were most often used and, in most studies, were associated with improvements in quantity and/or quality of reports, at least in the short term. Lectures/presentations and regular reminders (eg, verbal or by e-mail) were the educational methods most often identified by systematic reviews. Engineering initiatives were also generally effective, including improving the availability of reporting forms, electronic ADR reporting, modification of reporting procedures/policies or the reporting form and assistance to complete the form. Evidence for the benefit of economic incentives (eg, monetary rewards, lottery tickets, days off work, "giveaways" and educational credits) was often clouded by the potential effects of other concomitant initiatives, and any possible associated improvements often disappeared rapidly after incentives were discontinued.

Conclusion

Educational and engineering strategies appear to be the interventions most often associated with improvements in reporting rates by HCPs, at least in the short to medium term. However, the evidence for sustained impact is weak. The available data were insufficient to clearly identify the separate impact of economic strategies. Further work is also needed to examine the effects of these strategies on reporting by patients, carers and the public.

Disponible en: https://doi.org/10.1111/bcp.15791

European Journal of Clinical Pharmacology

External validation of population pharmacokinetic models of vancomycin in postoperative neurosurgical patients

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Objetive

Vancomycin is commonly used in the prevention and treatment of intracranial infections in postoperative neurosurgical patients with narrow therapeutic window and large pharmacokinetic variations. Several population pharmacokinetic (PPK) models of vancomycin have been established for neurosurgical patients. But comprehensive external evaluation has not been performed for almost all models. The objective of this study was to evaluate the predictive ability of published vancomycin PPK models in adult postoperative neurosurgical patients using an independent dataset.

Method

PubMed, Embase and China National Knowledge Internet databases were searched to identify published vancomycin PPK models in adult postoperative neurosurgical patients. Prediction-based and simulation-based diagnostics were used to evaluate model predictability. Bayesian forecasting was used to assess the influence of prior concentration on model prediction performance.

Result

A total of 763 vancomycin plasma concentrations from 493 postoperative neurosurgical patients were included in the external dataset. Eight population pharmacokinetic models of vancomycin in postoperative neurosurgical patients were included and evaluated. The model by Zhang et al. exhibited the best predictive performance in prediction-based diagnostics and prediction-corrected visual predictive checks, followed by the model by Shen et al. The predictive performance of other models was not satisfactory. The normalized predictive distribution error test shows that none of the models is suitable to describe our data. The predictive performance of vancomycin models was obviously improved by maximum a posteriori Bayesian forecasting.

Conclusion

The published PPK models for adult postoperative neurosurgical patients show extensive variation in predictive performance in our patients. Although it is challenging to recommend initial doses of vancomycin from these predictive models, the combination of model-based prediction and therapeutic drug monitoring can be used for dose optimization.

Disponible en: https://doi.org/10.1007/s00228-023-03511-6

Annals of Pharmacotherapy

Hepatorenal Syndrome With Acute Kidney Injury: Diagnosis and Medical Management

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Abstract

Objectives:

To review the current definitions and diagnostic criteria for acute kidney injury (AKI) and type 1 hepatorenal syndrome (HRS) now termed HRS-AKI and discuss the challenges in deciding the most appropriate medication regimens to treat patients with HRS-AKI.

Data sources:

PubMed (inception to April 2023) with bibliographies of retrieved articles searched for additional articles; organizational websites for clinical practice guidelines (CPGs).

Study selection and data extraction:

Randomized controlled trials (RCTs) evaluating albumin and vasoconstrictors for HRS-AKI.

Data synthesis:

A major change in the most recent revision of definitions and diagnostic criteria for HRS-AKI is the elimination of the set cutoff serum creatinine values for AKI. This change should be considered when comparing studies of HRS-AKI over time. Albumin has been administered to both vasoconstrictor treatment and placebo groups in all recent RCTs; however, there has never been a large RCT evaluating a no-albumin group. Most prospective trials comparing a midodrine/octreotide combination or norepinephrine to placebo or terlipressin have enrolled less than 100 patients limiting any conclusions regarding clinically important outcomes. Terlipressin with albumin has shown mixed results for complete HRS-AKI reversal with no reductions in crude mortality but adverse effect concerns involving ischemic and pulmonary events.

Relevance to patient care and clinical practice:

Type 1 hepatorenal syndrome with acute kidney injury is a potentially life-threatening syndrome with diagnostic and treatment challenges. Albumin plus a vasoconstrictor has become the routine HRS-AKI treatment even though there has not been a large RCT evaluating a no-albumin group. Terlipressin is the vasoconstrictor of choice for HRS-AKI in current CPGs, but it has adverse effect concerns and, until recently, was not available in the United States.

Conclusions:

In conjunction with changes in the definitions and diagnostic criteria for HRS-AKI, debate continues regarding the optimal therapy for HRS-AKI, particularly considering recent trials demonstrating ischemic and pulmonary adverse events with terlipressin used in combination with albumin.

Disponible en: https://doi.org/10.1177/10600280231177698

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Journal of the American Medical Directors Association

Systematic Review of Psychotropic Adverse Drug Event Monitoring Tools for Use in Long-Term Care Facilities

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Abstract

Objectives

To evaluate properties of psychotropic adverse drug event (ADE) monitoring tools intended for use in long-term care facilities.

Methods

Medline, CINAHL, Embase, and PsycInfo were searched from inception to August 2022 for studies reporting the development, validation, or application of tools to monitor psychotropic ADEs. Screening, data extraction, and quality assessment were performed independently by 2 authors. Each tool was assessed under the domains of test-retest reliability, interrater reliability, content validity, and construct validity.

Results

Eight studies that described 6 tools were included. Tools were developed in Wales (n = 2), United States (n = 1), Ireland (n = 1), Canada (n = 1), and Singapore (n = 1). Tools monitored 4 to 95 items related to antipsychotics (n = 6 tools), antidepressants (n = 4), benzodiazepines or hypnotics (n = 4), antiepileptics (n = 4), and dementia medications (n = 1). Tools commonly monitored sedation, tiredness, or sleepiness (n = 6), falls (n = 4), and tremor or extrapyramidal symptoms (n = 4). Tools were designed for application by nurses (n = 4), during family conferences (n = 1), and by general medical practitioners before repeat prescribing (n = 1). Two tools were reported to require 10 to 60 minutes to administer. Four tools were determined to have adequate content validity and 2 tools adequate interrater reliability. No tools reported test-retest reliability or construct validity.

Conclusions and Implications

Six published psychotropic ADE monitoring tools are heterogeneous in design and intended application. Existing tools are predominately designed for application by nurses with or without direct involvement of the wider multidisciplinary team. Further research is needed into models of care that facilitate psychotropic ADE monitoring in the long-term care facility setting, and the extent to which application of specific tools is associated with reduced medication-related harm.

Disponible en: https://doi.org/10.1016/j.jamda.2023.03.003

The Association of Long-Term Opioid Use With Health Care and Home Care Service Use Among Aged Home Care Clients

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Abstract

Objectives

To compare health care and home care service utilization, mortality, and long-term care admissions between long-term opioid users and nonusers among aged home care clients.

Design

A retrospective cohort study based on the Resident Assessment Instrument–Home Care (RAI-HC) assessments and electronic medical records.

Methods

Health care utilization, mortality, and long-term care admissions over a 1-year follow-up were recorded from electronic medical records, and home care service use from the RAI-HC. Negative binomial and multivariable logistic regression, adjusted for several socioeconomic and health characteristics, were used to analyze the associations between opioid use and health and home care service use.

Results

Compared with nonusers, long-term opioid users had more outpatient consultations (incidence rate ratio 1.26; 95% CI 1.08−1.48), home visits (1.23; 1.01−1.49), phone contacts (1.38; 1.13−1.68), and consultations without a patient attending a practice (1.22; 1.04−1.43) after adjustments. A greater proportion of long-term opioid users than nonusers had at least 1 hospitalization (49% vs 41%) but the number of inpatient days did not differ after adjustments. The home care nurses' median work hours per week were 4.3 (Q1-Q3 1.5−7.7) among opioid users and 2.8 (1.0−6.1) among nonusers. Mortality and long-term care admissions were not associated with opioid use.

Conclusions and Implications

Long-term opioid use in home care clients is associated with increased health care utilization regardless of the severity of pain and other sociodemographic and health characteristics. This may indicate the inability of health care organizations to produce alternative treatment strategies for pain management when opioids do not meet patients' needs. The exact reasons for opioid users' greater health care utilization should be examined in future.

Disponible en: https://doi.org/10.1016/j.jamda.2022.11.023

Association Between Multimorbidity and Rate of Falls: A 3-Year 5-Country Prospective Study in Generally Healthy and Active Community-Dwelling Adults Aged ≥70 Years

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Abstract

Objective

To examine the association between the baseline number of chronic diseases and multimorbidity with regard to the incidence of all and injurious falls over 3 years among European community-dwelling older adults.

Design

Observational analysis of DO-HEALTH, a double-blind, randomized controlled trial.

Methods

The main outcomes were the number of all falls and injurious falls experienced over 3 years. The number of chronic diseases and multimorbidity, defined as the presence of 3 or more chronic diseases at baseline, were assessed with the Self-Administered Comorbidity Questionnaire by Sangha et al.

Results

Among the 2155 participants included in the analyses (mean age: 74.9 years, 62% were women, 52% were physically active more than 3 times a week), 569 (26.4%) had multimorbidity at baseline. Overall, each 1-unit increase in the baseline number of chronic diseases was linearly associated with a 7% increased incidence rate of all falls [adjusted incidence rate ratio (aIRR) 1.07, 95% CI 1.03-1.12, $P < .001$] and a 6% increased incidence rate of injurious falls (aIRR 1.06, 95% CI 1.02-1.11, $P = .003$). Baseline multimorbidity was associated with a 21% increased incidence rate of all falls (aIRR 1.21, 95% CI 1.07-1.37, $P = .002$) and a 17% increased incidence rate of injurious falls (aIRR 1.17, 95% CI 1.03-1.32, $P = .02$).

Conclusions and Implications

Baseline number of prevalent chronic diseases and multimorbidity in generally healthy and active community-dwelling older adults were associated with increased incidence rates of all and injurious falls over 3 years. These findings support that multimorbidity may need consideration as a risk factor for falls, even in generally healthy and active older adults.

Disponible en: https://doi.org/10.1016/j.jamda.2022.12.011

Pharmacoepidemiology & Drug Safety

Impact of hemoglobin A1c level on the association between non-steroidal anti-inflammatory drug use and cardiovascular events in patients with type 2 diabetes: A population-based cohort study

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Abstract

Objective

Non-steroidal anti-inflammatory drugs (NSAIDs) should be used cautiously in patients with type 2 diabetes. We examined whether the cardiovascular risks associated with NSAID use depended on HbA1c level in patients with type 2 diabetes.

Methods

We conducted a population-based cohort study of all adult Danes with a first-time HbA1c measurement ≥48 mmol/mol during 2012–2020 (n=103,308). We used information on sex, age, comorbidity burden, and drug use to calculate time-varying inverse probability of treatment weights. After applying these weights in a pooled logistic regression, we estimated hazard ratios (HRs) of the association between use of NSAIDs (ibuprofen, naproxen, or diclofenac) and cardiovascular events (a composite of myocardial infarction, ischemic stroke, congestive heart failure, atrial fibrillation or flutter, and all-cause death). We stratified all analyses by HbA1c level (<53 or ≥53 mmol/mol).

Results

For ibuprofen use, the HR of a cardiovascular event was 1.53 (95% confidence interval [CI]: 1.34–1.75) in patients with HbA1c <53 and 1.24 (95% CI: 1.00–1.53) in patients with HbA1c ≥53 mmol/mol. For naproxen use, the HR was 1.14 (95% CI: 0.59–2.21) in patients with HbA1c <53 and 1.30 (95% CI: 0.49–3.49) in patients with HbA1c ≥53 mmol/mol. For diclofenac use, the HR was 2.40 (95% CI: 1.62–3.56) in patients with HbA1c <53 and 2.89 (95% CI: 1.65–5.04) in patients with HbA1c ≥53 mmol/mol.

Conclusions

In patients with type 2 diabetes, glycemic dysregulation did not affect the cardiovascular risk associated with NSAID use.

Disponible en: https://doi.org/10.1002/pds.5652