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REVISTAS GERIÁTRICAS

Archives of Gerontology and Geriatrics

Association between polypharmacy and mortality in the older adults: A systematic review and meta-analysis

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Abstract

Background

: Polypharmacy and related adverse consequences are common in the older adults, especially mortality, but the causality of this relationship remains unclear. This meta-analysis aimed to explore the relationship between polypharmacy and mortality in older adults.

Methods

: We systematically searched Pubmed, Embase, and the Cochrane Library from inception until August 2021 to identify observational studies providing quantitative estimates on the association between polypharmacy (≥ 5 drugs) and mortality in the elderly (≥ 65 years). Results from individual studies were pooled using a random-effects or fixed-effects model.

Results

: A total of twenty-four cohort studies including 2,967,952 participants of 65 years or older in this meta-analysis. twenty-four studies found a significant increase in mortality associated with polypharmacy (≥ 5 drugs) [Relative Risk, $RR=1.28$, 95%CI (1.19,1.39), $P<0.05$] or excessive polypharmacy (≥ 10 drugs) [Relative Risk, $RR=1.44$, 95%CI (1.03,2.01), $P<0.05$] among older adults. Eight studies showed an 50% increased hospitalization rate for polypharmacy in the older adults [$RR=1.50$, 95%CI (1.18,1.89), $P<0.05$]. Subgroup analysis showed that the relationship between polypharmacy and mortality was different among older adults in community [$RR=1.41$, 95%CI (1.24,1.60), $P<0.05$], in hospital [$RR=1.10$, 95%CI (1.00,1.20), $P<0.05$], in institutions [$RR=1.47$, 95%CI (1.29,1.68), $P<0.05$]. The mortality rate of the elderly using 5 to 9 drugs was [$RR=1.23$, 95%CI (1.06,1.43), $P<0.05$] and using more than 10 drugs was [$RR=1.44$, 95%CI (1.03,2.01), $P<0.05$].

Conclusions

The results of this meta-analysis suggest that polypharmacy may be associated with increased mortality in older adults, but this association must be carefully considered and needed further validation.

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BMC Geriatrics

Primary care physicians' approaches to low-value prescribing in older adults: a qualitative study

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Background

Low-value prescribing may result in adverse patient outcomes and increased medical expenditures. Clinicians' baseline strategies for navigating patient encounters involving low-value prescribing remain poorly understood, making it challenging to develop acceptable deprescribing interventions. Our objective was to characterize primary care physicians' (PCPs) approaches to reduce low-value prescribing in older adults through qualitative analysis of clinical scenarios.

Methods

As part of an overarching qualitative study on low-value prescribing, we presented two clinical scenarios involving potential low-value prescribing during semi-structured interviews of 16 academic and community PCPs from general internal medicine, family medicine and geriatrics who care for patients aged greater than or equal to 65. We conducted a qualitative analysis of their responses to identify salient themes related to their approaches to prescribing, deprescribing, and meeting patients' expectations surrounding low-value prescribing.

Results

We identified three key themes. First, when deprescribing, PCPs were motivated by their desire to mitigate patient harms and follow medication safety and deprescribing guidelines. Second, PCPs emphasized good communication with patients when navigating patient encounters related to low-value prescribing; and third, while physicians emphasized the importance of shared decision-making, they prioritized patients' well-being over satisfying their expectations.

Conclusions

When presented with real-life clinical scenarios, PCPs in our cohort sought to reduce low-value prescribing in a guideline-concordant fashion while maintaining good communication with their patients. This was driven primarily by a desire to minimize the potential for harm.

This suggests that barriers other than clinician knowledge may be driving ongoing use of low-value medications in clinical practice.

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Drugs and Aging

Barriers and Enablers of Healthcare Providers to Deprescribe Cardiometabolic Medication in Older Patients: A Focus Group Study

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Introduction

Benefits and risks of preventive medication change over time for ageing patients and deprescribing of medication may be needed. Deprescribing of cardiovascular and antidiabetic drugs can be challenging and is not widely implemented in daily practice.

Objective

The aim of this study was to identify barriers and enablers of deprescribing cardiometabolic medication as seen by healthcare providers (HCPs) of different disciplines, and to explore their views on their specific roles in the process of deprescribing.

Methods

Three focus groups with five general practitioners, eight pharmacists, three nurse practitioners, two geriatricians, and two elder care physicians were conducted in three cities in The Netherlands. Interviews were recorded and transcribed verbatim. Directed content analysis was performed on the basis of the Theoretical Domains Framework. Two researchers independently coded the data.

Results

Most HCPs agreed that deprescribing of cardiometabolic medication is relevant but that barriers include lack of evidence and expertise, negative beliefs and fears, poor communication and collaboration between HCPs, and lack of resources. Having a guideline was considered an enabler for the process of deprescribing of cardiometabolic medication. Some HCPs feared the consequences of discontinuing cardiovascular or antidiabetic medication, while others were not motivated to deprescribe when the patients experienced no problems with their medication. HCPs of all disciplines stated that adequate patient communication and involving the patients and relatives in the decision making enables deprescribing. Barriers to deprescribing included the use of medication initiated by specialists, the poor exchange of information, and the amount of time it takes to deprescribe cardiometabolic medication. The HCPs were uncertain about each other's roles and responsibilities. A multidisciplinary approach including the pharmacist and nurse

practitioner was seen as the best way to support the process of deprescribing and address barriers related to resources.

Conclusion

HCPs recognized the importance of deprescribing cardiometabolic medication as a medical decision that can only be made in close cooperation with the patient. To successfully accomplish the process of deprescribing they strongly recommended a multidisciplinary approach.

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Which Potentially Inappropriate Medications List Can Detect Patients At Risk of Readmissions in the Older Adult Population Admitted for Falls? An Observational Multicentre Study Using a Clinical Data Warehouse

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Background and Objective

Hospital readmissions are common in the older adult population and potentially inappropriate medications are known to be involved in these readmissions. Several lists of potentially inappropriate medications have been published in diverse countries in order to adapt the lists to local specificities. Among them, the Beers Criteria® were first published in 1991 in the USA, followed by the French Laroche list, the Norwegian NORGE criteria, the German PRISCUS list, the Austrian consensus panel list and the European list, EU-7. The main objective was to detect which potentially inappropriate medications list can better detect hospital readmissions within 30 days in the older adult population hospitalised for fall-related injuries.

Methods

We conducted a multicentre, observational, retrospective cohort study. Data from older patients initially hospitalised for falls in 2019 and discharged home were retrieved from the Clinical Data Warehouse. Exposure to potentially inappropriate medications was classified according to the six lists mentioned above. The local ethics committee approved the study protocol (number CER-2020-79).

Results

After adjustments using propensity score matching, taking a potentially inappropriate medication as per the Laroche and PRISCUS lists was associated with a 30-day hospital readmission with an odds ratio of 1.58 (95% confidence interval 1.06–2.37) and 1.68 (95% confidence interval 1.13–2.50), respectively, while the other four studied lists showed no associations with readmissions.

Conclusions

Our study evidenced that not all lists published allow the accurate prediction of hospital readmissions to the same extent. We found that the Laroche and PRISCUS lists were associated with increased 30-day all-cause hospital readmissions after an index admission with a fall-related injury.

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Non-Steroidal Anti-Inflammatory Drugs and Risk of Acute Kidney Injury and Hyperkalemia in Older Adults: A Retrospective Cohort Study and External Validation of a Clinical Risk Model

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Aim

Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used analgesics among older adults. Adverse effects may be avoided by careful patient selection. We aimed to evaluate the incidence of acute kidney injury (AKI) and/or hyperkalemia, risk factors, and the accuracy of an NSAID risk prediction model in a cohort of Asian older adults.

Methods

We conducted a retrospective cohort study of older adults, age 65 years and above, who received prescriptions between March 2015 and December 2017 from Singapore's largest cluster of public healthcare institutions. Factors associated with 30-day incident acute kidney injury and/or hyperkalemia were evaluated with multivariable regression analysis. Calibration and discrimination of the Nash prediction model were assessed using the Hosmer-Lemeshow goodness-of-fit test and C-statistic, respectively.

Results

The primary outcome occurred in 16.7% of 12,798 older adults. Topical NSAIDs (adjusted OR 1.29, 95% CI 1.15–1.45), systemic NSAIDs of 1–14 days' duration (adjusted OR 1.43, 95% CI 1.27–1.62), and systemic NSAIDs > 14 days (adjusted OR 1.84, 95% CI 1.37–2.49) were independently associated with the primary outcome, compared with no NSAID. Diabetes mellitus, cardiovascular disease, lower estimated glomerular filtration rate (eGFR), and diuretics were also independently associated with increased incident AKI and/or hyperkalemia. When applied to older adults with systemic NSAIDs > 14 days ($n = 305$), the Nash risk model had poor calibration ($p < 0.001$) and poor discrimination with C-statistic 0.527 (0.438, 0.616).

Conclusions

Longer NSAID duration and systemic compared with topical route were associated with incremental odds for acute renal events. Further studies are required to improve the available risk model to guide NSAID prescriptions in older adults.

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REVISTAS FARMACÉUTICAS

Number-dependent association of potentially inappropriate medications with clinical outcomes and expenditures among community-dwelling older adults: a population-based cohort study

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Aim

To investigate the prevalence of potentially inappropriate medication (PIM) prescribing and its number-dependent association (PIM=1, 2, ≥ 3) with all-cause hospitalizations, emergency department (ED) visits, and medication expenditures in Beijing, China.

Method

A retrospective cohort analysis was conducted to analyze PIM prescribing in community-dwelling older adults aged ≥ 65 years within the Beijing Municipal Medical Insurance Database (data from July to September 2016). The prevalence of PIMs was estimated based on the 2015 Beers Criteria. Logistic models were utilized to investigate the associations between PIM use and all-cause hospitalizations and ED visits. Generalized linear models with the log link and gamma distribution were used to analyze associations between PIM use and medication expenditures.

Results

Among the 506,214 older adults, the prevalence of PIM was 38.07%. After adjusting for covariables, prescribing 2 and ≥ 3 PIMs was associated with increased risks of hospitalizations (PIM=2: OR 1.34, 95%CI: 1.22-1.47; PIM ≥ 3 : OR=1.47, 95%CI: 1.32-1.63) and ED visits (PIM=2: OR = 1.29, 95%CI 1.12-1.48; PIM ≥ 3 : OR=1.23, 95%CI: 1.04-1.44). Exposures of 2 and ≥ 3 PIMs were associated with higher medication expenditures for inpatient visits (PIM=2: incidence rate ratio IRR = 1.08, 95%CI 1.01-1.16; PIM ≥ 3 : IRR=1.18, 95%CI: 1.08-1.28). Vasodilators were the most frequent PIM prescribing group among patients who ended with hospitalizations or ED visits.

Conclusions

PIMs were prescribed at a high rate among community-dwelling older adults in Beijing. PIMs ≥ 2 were associated with increased risks of hospitalizations, ED visits, and increased inpatient medication expenditures. Effective interventions are needed to target unnecessary and inappropriate medications in older adults.

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Oral targeted therapy dose adaptation in older patients with cancer: a real-life French cohort.

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Introduction

Oral targeted therapies (OTT) are widely used for cancer management. However, there is no consensus on OTT dose adaptation in older patients with cancer.

Methods

This non-interventional, retrospective study was a real-life assessment of dose adaptation for six OTT (afatinib, everolimus, palbociclib, pazopanib, sorafenib, and sunitinib), at baseline and during treatment, with the reasons of such changes, in ≥ 70 -year-old patients treated between 02/2016 and 08/2019. Data were compared with univariate models fitted with all variables.

Results

Among the 986 patients treated with OTT, the group of ≥ 70 -year-old patients ($n=122$) received afatinib (15.6%), everolimus (14.8%), palbociclib (50.8%), pazopanib (9.8%), sorafenib (5.8%), or sunitinib (3.2%). At baseline, the prescribed OTT dose was adapted (reduction) in 29% of ≥ 70 -year-old patients (35/122). These 35 patients were significantly older (mean age: 80 vs 74 years, $p < 0.001$), and had more frequently a performance status score ≥ 2 ($p < 0.01$) than the other patients ($n=87$). In the standard dose group, higher toxicity grades ($p=0.18$) and subsequent dose reduction (41% of patients, 36/87) tended to be more frequent compared with the baseline adapted dose group (26%, 9/35, $p=0.1$). At the study end, 53% of patients of the whole cohort (65/122) were taking a lower dose than the recommended one.

Conclusion

At OTT initiation, dose was adapted in 29% of older adults with cancer, rarely after a formal oncogeriatric evaluation (6.5% of all patients). In the absence of recommendations, clinical studies are needed to evaluate the efficacy and safety of baseline OTT dose reduction in older adults with cancer.

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Effects of Pharmacist Interventions on Cardiovascular Risk Factors and Outcomes: An Umbrella Review of Meta-analysis of Randomized Controlled Trials

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Aim

To grade the evidence from published meta-analyses of randomized controlled trials (RCTs) that assessed effects of pharmacist intervention on cardiovascular risk factors and cardiovascular outcomes.

Methods

MEDLINE, Embase, and the Cochrane Library were searched from database inception to July 2021. Meta-analyses of RCTs were eligible. Quality of evidence were assessed by GRADE approach.

Results

From 9,308 publications, 149 full-text articles were evaluated for eligibility, and 24 studies with 85 unique meta-analyses that assessed effects of pharmacist intervention on cardiovascular risk factors and cardiovascular outcomes. Overall, 71.7% (61/85) of unique meta-analyses showed significant impacts of pharmacist intervention. For the quality of evidence, 63.4% of meta-analyses had large heterogeneity ($I^2 > 50\%$) while 1.2%, 16.5%, 32.9% and 49.4% of meta-analyses were graded as high, moderate, low and very low quality based on GRADE approach, respectively. Among meta-analyses with moderate quality, pharmacist interventions significantly mitigated risk factors (including 6/3 mmHg reduction of blood pressure, increased the rate of lipid control, glucose control and smoking cessation (pooled OR 1.91 (1.55, 2.35), 3.11 (2.3, 4.3), and 2.3 (1.33, 3.97), respectively)) and improved medication adherence (pooled OR 1.67 (1.38, 2.02)). Furthermore, pharmacist interventions significantly reduced all-cause mortality (pooled OR 0.72 (0.58, 0.89)) and improved quality of life in patients suffering from chronic heart failure.

Conclusion

This umbrella review found convincing evidence that pharmacist intervention can provide a wide range of benefits in cardiovascular disease management, ranging from risk factor control, improvement in medication adherence and in some setting, reduction in morbidity and mortality.

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Drug Safety

European Journal of Clinical Pharmacology

Comparison of statins for primary prevention of cardiovascular disease and persistent physical disability in older adults

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Purpose

Recent epidemiological evidence has suggested that use of lipid-lowering medications, particularly statins, was associated with reduced cardiovascular disease (CVD) events and persistent physical disability in healthy older adults. However, the comparative efficacy of different statins in this group remains unclear. This study aimed to compare different forms of statins in their associations with CVD and physical disability in healthy older adults.

Methods

This post hoc analysis included data from 5981 participants aged ≥ 70 years (≥ 65 if US minorities; median age: 74.0) followed for a median of 4.7 years, who had no prior CVD events or physical disability and reported using a statin at baseline. The incidence of the composite and components of major adverse cardiovascular events and persistent physical disability were compared across different statins according to their type, potency, and lipophilicity using multivariable Cox proportional-hazards models.

Results

Atorvastatin was the most used statin type at baseline (37.9%), followed by simvastatin (29.6%), rosuvastatin (25.5%), and other statins (7.0%, predominantly pravastatin). In comparisons of specific statins according to type and lipophilicity (lipophilic vs. hydrophilic statin), observed differences in all outcomes were small and not statistically significant (all p values > 0.05). High-potency statin use (atorvastatin and rosuvastatin) was marginally associated with lower risk of fatal CVD events compared with low-/moderate-potency statin use (hazard ratio: 0.59; 95% confidence interval: 0.35, 1.00).

Conclusion

There were minimal differences in CVD outcomes and no significant difference in persistent physical disability between various forms of statins in healthy older adults. Future investigations are needed to confirm our results.

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European Journal of Hospital Pharmacy

The potential for deprescribing in a palliative oncology patient population: a cross-sectional study

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Abstract

Objectives

The use of preventive medication in palliative oncology patients may be inappropriate due to limited life expectancy. Deprescribing tools are available but time-consuming and not always tailored to this specific population. Our primary goal was to identify potentially inappropriate medications (PIMs) in palliative oncology patients with a life expectancy of up to 2 years using an adapted deprescribing tool. Our secondary aim was to identify patient characteristics associated with the presence of PIMs.

Methods

Oncology patients with a life expectancy of up to 2 years were included cross-sectionally. An adapted deprescribing tool was developed to identify PIMs. Logistic regression was used to identify factors associated with having PIMs.

Results

A total of 218 patients were included in this study of which 56% had at least one PIM with a population mean of 1.1 PIM per patient. Most frequently defined PIMs were antihypertensive drugs and gastric acid inhibitors. Identification of PIMs by review took an estimated 5–10 min per patient. Polypharmacy, age >65 years and inpatient/outpatient status were found to be associated with having at least one PIM.

Conclusions

Deprescribing is possible in more than half of palliative oncology patients with a life expectancy of up to 2 years. The adapted deprescribing tool used is non-time consuming and suitable for palliative oncology patients, regardless of age.

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Clinical pharmacology & therapeutics

Anticoagulant Treatment Regimens in Patients with Covid-19: A Meta-Analysis

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Abstract

Coronavirus disease 2019 (COVID-19) is associated with a hypercoagulable state. It has been hypothesized that higher-dose anticoagulation, including therapeutic-dose and intermediate-dose anticoagulation, is superior to prophylactic-dose anticoagulation in the treatment of COVID-19. This meta-analysis evaluated the efficacy and safety of higher-dose anticoagulation compared with prophylactic-dose anticoagulation in patients with COVID-19. Ten randomized controlled open-label trials with a total of 5,753 patients were included. The risk of death and net adverse clinical events (including death, thromboembolic events, and major bleeding) were similar between higher-dose and prophylactic-dose anticoagulation (risk ratio (RR) 0.96, 95% CI, 0.79–1.16, $P = 0.66$ and RR 0.87, 95% CI, 0.73–1.03, $P = 0.11$, respectively). Higher-dose anticoagulation, compared with prophylactic-dose anticoagulation, decreased the risk of thromboembolic events (RR 0.63, 95% CI, 0.47–0.84, $P = 0.002$) but increased the risk of major bleeding (RR 1.76, 95% CI, 1.19–2.62, $P = 0.005$). The risk of death showed no statistically significant difference between higher-dose anticoagulation and prophylactic-dose anticoagulation in noncritically ill patients (RR 0.87, 95% CI, 0.50–1.52, $P = 0.62$) and in critically ill patients with COVID-19 (RR 1.04, 95% CI, 0.93–1.17, $P = 0.5$). The risk of death was similar between therapeutic-dose vs. prophylactic-dose anticoagulation (RR 0.92, 95% CI 0.69–1.21, $P = 0.54$) and between intermediate-dose vs. prophylactic-dose anticoagulation (RR 1.01, 95% CI 0.63–1.61, $P = 0.98$). In patients with markedly increased d-dimer levels, higher-dose anticoagulation was also not associated with a decreased risk of death as compared with prophylactic-dose anticoagulation (RR 0.86, 95% CI, 0.64–1.16, $P = 0.34$). Without any clear evidence of survival benefit, these findings do not support the routine use of therapeutic-dose or intermediate-dose anticoagulation in critically or noncritically ill patients with COVID-19.

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REVISTAS MEDICINA GENERAL

Atención Primaria

Fracturas de cadera en pacientes tratados con fármacos antipsicóticos. Estudio de cohortes históricas en Cataluña

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Objetivo

Evaluar la incidencia de fractura de cadera en pacientes con tratamiento antipsicótico, comparándola con la de individuos que no han sido tratados con antipsicóticos.

Diseño

Estudio de cohortes históricas de pacientes tratados con fármacos antipsicóticos (TAP) y pacientes sin tratamiento conocido (no TAP). El periodo de observación fue 2006-2014.

Emplazamiento

Todos los equipos de atención primaria de Cataluña del Instituto Catalán de la Salud (ICS).

Participantes

Pacientes mayores de 44 años con TAP de al menos 3 meses de duración. Cohorte control: selección aleatoria de pacientes no TAP emparejando por comorbilidades basales, sexo, edad y prescripción de fármacos (excluyendo psicofármacos). Se analiza un total de 22.010 pacientes.

Mediciones principales Tasa de incidencia ($\times 1.000$ personas-año [PY]) de fractura de cadera en cada grupo (TAP y no TAP). Modelos de regresión de Cox para estimar riesgos ajustados (hazard ratio [HR]) añadiendo los psicofármacos como covariables.

Resultados

La tasa de incidencia de fractura de cadera fue mayor en los pacientes TAP (5,83 frente a 3,58 fracturas por 1.000 PY), y es mayor en todos los estratos según sexo, edad y tipo de diagnóstico. El riesgo de sufrir una fractura de cadera fue un 60% mayor (HR: 1,60; IC95%: 1,34-1,92) en el grupo TAP que en el grupo no TAP. El riesgo fue mayor en el grupo con esquizofrenia (HR: 3,57; IC95%: 1,75-7,30), seguido del trastorno bipolar (HR: 2,61; IC95%: 1,39-4,92) y depresión (HR: 1,51; IC95%: 1,21-1,88).

Conclusiones

Los pacientes con tratamiento antipsicótico presentan más riesgo de fractura de cadera que los que no han sido tratados con antipsicóticos.

Disponible en: <https://www.elsevier.es/es-revista-atencion-primaria-27-articulo-fracturas-cadera-pacientes-tratados-con-S0212656721002055>