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BMC Geriatrics

Comprehensive pharmaceutical care to prevent drug-related readmissions of dependent-living elderly patients: a randomized controlled trial

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Abstract

Background

Elderly patients are vulnerable to adverse drug reactions (ADRs). Drug-related readmissions (DRRs) can be a major consequence of ADR. Therefore, this study aimed to investigate the effects of a ward-based, comprehensive pharmaceutical care service on the occurrence of DRRs as the endpoint in dependent-living elderly patients.

Methods

A randomized, controlled trial was performed at a German University Hospital. Patients fulfilling the following criteria were eligible: admission to a cooperating ward, existing drug therapy at admission, 65 years of age and older, home-care or nursing home residents in ambulatory care, and a minimum hospital stay of three days. Patients received either standard care (control group) or pharmaceutical care (intervention group). Follow-up consultations were conducted for each patient at 1, 8, 26, and 52 weeks after discharge. The time to DRR was defined as the primary outcome measure and was analysed using the log-rank test. The Cox-proportional hazard model was used for risk factor analysis.

Results

Sixty patients (n = 31 intervention group, n = 29 control group) participated in the study. For patients in the intervention group, the median time to DRR was prolonged; however, the level of statistical significance was not reached (log-rank test P = 0.068; HR = 3.28, P = 0.086). When the risk factors 'age' or 'length of stay on the ward' were added to the Cox proportional hazard model, patients in the control group exhibited a significantly higher risk of experiencing a DRR than patients of the intervention group (HR = 4.62; P = 0.028 including age and HR = 5.76; P = 0.033 including length of stay on the ward).

Conclusions

Our findings demonstrate the successful implementation of ward-based, comprehensive pharmaceutical care for dependent-living elderly. Despite a low participation rate, which led to an underpowered study, the results provide a preliminary efficacy signal and effect size estimates to power a definitive trial.

Disponible en: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-018-0814-3

DRUGS AND AGING

Deprescribing Benzodiazepines in Older Patients: Impact of Interventions Targeting Physicians, Pharmacists, and Patients

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Abstract

Benzodiazepines (BZDs; including the related Z-drugs) are frequently targets for deprescribing; long-term use in older people is harmful and often not beneficial. BZDs can result in significant harms, including falls, fractures, cognitive impairment, car crashes and a significant financial and legal burden to society. Deprescribing BZDs is problematic due to a complex interaction of drug, patient, physician and systematic barriers, including concern about a potentially distressing but rarely fatal withdrawal syndrome. Multiple studies have trialled interventions to deprescribe BZDs in older people and are discussed in this narrative review. Reported success rates of deprescribing BZD interventions range between 27 and 80%, and this variability can be attributed to heterogeneity of methodological approaches and limited generalisability to cognitively impaired patients. Interventions targeting the patient and/or carer include raising awareness (direct-to-consumer education, minimal interventions, and 'one-off' geriatrician counselling) and resourcing the patient (gradual dose reduction [GDR] with or without cognitive behavioural therapy, teaching relaxation techniques, and sleep hygiene). These are effective if the patient is motivated to cease and is not significantly cognitively impaired. Interventions targeted to physicians include prescribing interventions by audit, algorithm or medication review, and providing supervised GDR in combination with medication substitution. Pharmacists have less frequently been the targets for studies, but have key roles in several multifaceted interventions. Interventions are evaluated according to the Behaviour Change Wheel. Research supports trialling a stepwise approach in the cognitively intact older person, but having a low threshold to use less-consultative methods in patients with dementia. Several resources are available to support deprescribing of BZDs in clinical practice, including online protocols.

Disponible en: https://link.springer.com/article/10.1007/s40266-018-0544-4

Anticholinergic Drug Burden Tools/Scales and Adverse Outcomes in Different Clinical Settings: A Systematic Review of Reviews

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Abstract

Background

Cumulative anticholinergic exposure (anticholinergic burden) has been linked to a number of adverse outcomes. To conduct research in this area, an agreed approach to describing anticholinergic burden is needed.

Objective

This review set out to identify anticholinergic burden scales, to describe their rationale, the settings in which they have been used and the outcomes associated with them.

Methods

A search was performed using the Healthcare Databases Advanced Search of MEDLINE, EMBASE, Cochrane, CINAHL and PsycINFO from inception to October 2016 to identify systematic reviews describing anticholinergic burden scales or tools. Abstracts and titles were reviewed to determine eligibility for review with eligible articles read in full. The final selection of reviews was critically appraised using the ROBIS tool and pre-defined data were extracted; the primary data of interest were the anticholinergic burden scales or tools used.

Results

Five reviews were identified for analysis containing a total of 62 original articles. Eighteen anticholinergic burden scales or tools were identified with variation in their derivation, content and how they quantified the anticholinergic activity of medications. The Drug Burden Index was the most commonly used scale or tool in community and database studies, while the Anticholinergic Risk Scale was used more frequently in care homes and hospital settings. The association between anticholinergic burden and clinical outcomes varied by index and study. Falls and hospitalisation were consistently found to be associated with anticholinergic burden. Mortality, delirium, physical function and cognition were not consistently associated.

Conclusions

Anticholinergic burden scales vary in their rationale, use and association with outcomes. This review showed that the concept of anticholinergic burden has been variably defined and inconsistently described using a number of indices with different content and scoring. The association between adverse outcomes and anticholinergic burden varies between scores and has not been conclusively established.

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Potential Drug-Drug Interactions in a Cohort of Elderly, Polymedicated Primary Care Patients on Antithrombotic Treatment

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Abstract

Introduction

Drug–drug interactions (DDIs) are an important risk factor for adverse drug reactions. Older, polymedicated patients are particularly affected. Although antithrombotics have been detected as high-risk drugs for DDIs, data on older patients exposed to them are scarce.

Methods

Baseline data of 365 IDrug study outpatients (≥ 60 years, use of an antithrombotic and one or more additional long-term drug) were analyzed regarding potential drug–drug interactions

(pDDIs) with a clinical decision support system. Data included prescription and self-medication drugs.

Results

The prevalence of having one or more pDDI was 85.2%. The median number of alerts per patient was three (range 0–17). For 58.4% of the patients, potential severe/contraindicated interactions were detected. Antiplatelets and non-steroidal anti-inflammatory drugs (NSAIDs) showed the highest number of average pDDI alert involvements per use (2.9 and 2.2, respectively). For NSAIDs, also the highest average number of severe/contraindicated alert involvements per use (1.2) was observed. 91.8% of all pDDI involvements concerned the 25 most frequently used drug classes. 97.5% of the severe/contraindicated pDDIs were attributed to only nine different potential clinical manifestations. The most common management recommendation for severe/contraindicated pDDIs was to intensify monitoring. Number of drugs was the only detected factor significantly associated with increased number of pDDIs ($p < 0.001$).

Conclusion

The findings indicate a high risk for pDDIs in older, polymedicated patients on antithrombotics. As a consequence of patients' frequently similar drug regimens, the variety of potential clinical manifestations was small. Awareness of these pDDI symptoms and the triggering drugs as well as patients' self-medication use may contribute to increased patient safety.

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JOURNAL OF CLINICAL INTERVENTIONS IN AGING

Combined use of drugs inhibiting the renin–angiotensin system: prescribing patterns and risk of acute kidney injury in German nursing home residents

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Abstract

Background/aims: In 2012, the European Medicines Agency reviewed the safety of dual renin–angiotensin system (RAS) blockade because of potentially increased risks for inter alia acute kidney injury (AKI). Since residents of nursing homes are particularly vulnerable to adverse drug outcomes, the aims of our study were to describe RAS-inhibiting drug use in German nursing home residents and examine the risk of AKI associated with dual RAS blockade.

Methods: Based on claims data, a nested case-control study within a cohort of RAS-inhibiting drug users was conducted. Using conditional logistic regression, confounder-adjusted odds ratios (aORs) and 95% confidence intervals (CI) were obtained for the risk of AKI associated with dual RAS blockade. Subgroup analyses were performed in patients with diabetes or chronic kidney disease and both comorbidities.

Results: Of all 127,227 nursing home residents, the study cohort included 64,567 (50.7%) who were treated with at least one RAS-inhibiting drug. More than three quarters of the study population were female (77.1%). Mean age was 86.0 ± 6.8 years. Most residents were treated with angiotensin-converting enzyme inhibitors (77.8%), followed by angiotensin II receptor blockers (21.6%) and aliskiren (0.2%). Annual prevalence of dual RAS blockade declined from 9.6 (95% CI 7.8–11.8) in 2010 to 4.7 (95% CI 4.0–5.4) per 1,000 users in 2014. In the overall cohort, AKI was not significantly associated with dual RAS blockade (aOR 1.99; 0.77–5.17). However, significantly increased aORs were observed when considering patients with diabetes (3.47; 1.27–9.47), chronic kidney disease (4.74; 1.24–18.13) or both (11.17; 2.65–47.15).

Conclusions: Prescribing of drugs inhibiting the RAS is common in German nursing homes. Though the prevalence of dual RAS blockade declined, our study showed an increased risk of AKI in patients with diabetes and/or chronic kidney disease. Therefore, cautious use is warranted in these vulnerable patients.

Disponible en: https://www.dovepress.com/combined-use-of-drugs-inhibiting-the-renin-angiotensin-system-prescrib-peer-reviewed-article-CIA

EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY

Potentially inappropriate medication in the elderly: a systematic review of validated explicit criteria

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Abstract

Purpose

Potentially inappropriate medication (PIM) use causes preventable adverse drug reactions in older patients. Several assessment tools have been published to identify and avoid PIM use. In this systematic literature review, we aim to provide summaries and comparisons of validated PIMs lists published between 1991 and 2017 internationally.

Methods

In accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement (PRISMA), we performed a systematic review of articles describing the development and validation of criteria for identification of PIMs among older people published between January 1991 and April 2017. The searches were conducted on PUBMED, AgeLine, Academic Search, Academic Search Premier, and CINAHL. We identified the most common medications/classes described as PIM. We also identified the drug–disease interactions and drug–drug interactions reported among criteria.

Results

From 2933 articles screened, 36 met our inclusion criteria. The majority used the Delphi method to validate their criteria. We identified 907 different medications/classes, 536 different drug disease interactions involving 84 diseases/conditions, and 159 drug–drug interactions. Benzodiazepines and nonsteroidal anti-inflammatory drugs were the medications most commonly reported as potentially inappropriate for older people.

Conclusion

Although approaches aimed at detecting inappropriate prescribing have intensified in recent years, we observed limited overlap between different PIM lists. Additionally, some PIM lists did not provide special considerations of use and alternative therapies to avoid PIMs. These facts may compromise the use of PIM lists in clinical practice. Future PIM lists should integrate information about alternative therapies and special considerations of use in order to help clinicians in the drug prescription.

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THE CONSULTANT PHARMACIST

Deprescribing in Newly Admitted Psychogeriatric Nursing Facility Patients

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Abstract

Objective: To determine whether advised changes as a result of structured medication reviews in psychogeriatric patients were implemented and if the implemented changes were maintained.

Design: Prospective cohort study.

Setting: Three nursing facilities in The Netherlands.

Patients, Participants: Newly admitted psychogeriatric residents.

Intervention: After admission, a structured medication review was performed by a pharmacist and physician resulting in a treatment plan that was approved by the patient's legal representative and implemented.

Main Outcome Measure(s): The percentage of advised changes approved (= approval rate) and the percentage of implemented medication changes still present 90 days after approval (= 90-day implementation rate).

Results: A total of 45 patients were included who used a total number of 333 drugs (mean ± standard deviation 7.4 ± 3.3 drugs). Changes were advised to 159 medications used by 42 patients. Of these changes, 150 were approved (approval rate 94.3%). Finally, 105 were implemented, and 89 were still implemented after 90 days (90-day implementation rate 84.8%). Overall, 59.7% of the advised changes concerned deprescribing (stopping or dose reduction). The proportion of advised changes implemented was similar for symptommodifying

and risk-modifying drugs, namely, almost 85%. Overall, 55.3% of the recommended changes to deprescribe concerned 10 drug groups.

Conclusion: Medication could be successfully deprescribed from psychogeriatric patients after structured medication reviews performed by pharmacists and nursing facility physicians. More than 50% of the advised changes to deprescribe involved 10 drug groups, which raises the question whether the structured medication review can be performed more efficiently by focusing on the most common problems.

Disponible en: http://www.ingentaconnect.com/contentone/ascp/tcp/2018/00000033/00000006/art00006

PHARMACOEPIDEMIOLOGY AND DRUG SAFETY

Proton pump inhibitor use and the risk of fractures among an older adult cohort

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Abstract

Purpose

The purpose of the study is to determine if the use of a proton pump inhibitor (PPI) is associated with an increased fracture risk, as some prior studies have suggested.

Methods

This retrospective cohort study included data on 4438 participants aged 65 and older who had no fracture in the year prior to baseline and had ≥5 years of enrollment history in Kaiser Permanente Washington, an integrated healthcare delivery system in Seattle, WA, during 1994 to 2014. Time-varying cumulative exposure to PPIs was determined from automated pharmacy data by summing standard daily doses (SDDs) across fills, and patients were categorized as no use (reference group, ≤30 SDD), light use (31-540 SDD), moderate use (541-1080 SDD), and heavy use (≥1081 SDD). Incident fractures were assessed using International Classification of Diseases, Ninth Revision codes from electronic medical records. Potential confounders, chosen a priori, were assessed at baseline and at each 2-year follow-up visit. Fracture risk was analyzed using a Cox proportional hazards model.

Results

Over a mean follow-up of 6.1 years, 802 (18.1%) participants experienced a fracture. No overall association was found between PPI use and fracture risk. Adjusted hazard ratios comparing users to the referent category were 1.08 (95% CI 0.83-1.40) for light users, 1.31 (95% CI 0.86-1.95) for moderate users, and 0.95 (95% CI 0.68-1.34) for heavy users. Among patients with SSD > 30, no appreciable increase in fracture risk was present in persons with recent versus distant use (adjusted hazard ratio of 1.14 [95% CI 0.91-1.42]).

Conclusions

No association was observed between PPI use and fracture risk among older adults.

Disponible en: https://onlinelibrary.wiley.com/doi/abs/10.1002/pds.4406