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REVISIÓN BIBLIOGRÁFICA NOVIEMBRE 2022: Selección de artículos

REVISTAS FARMACÉUTICAS

AJHP American Journal of Health System Pharmacist

Hospital at home: Development of pharmacy services

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Abstract

Acute hospital care at home, or hospital at home (HaH), is an innovative patient care model that provides hospital-level care in the home environment. This model has existed within the United States and internationally for several years; however, the COVID-19 pandemic–related strain on hospital capacity created new momentum in the United States to implement and expand this care model. Randomized controlled trials demonstrated that HaH produces favorable outcomes, lowers overall medical costs, and decreases excess healthcare utilization, including 30-day readmissions. Patients in HaH programs describe better continuity of care and increased satisfaction, and frail older adults experience less sedentary time and better functional outcomes. Further, the Centers for Medicare and Medicaid Services reimburses at inpatient rates for HaH care if certain eligibility criteria are met.

Medication management is a critical component to a successfully implemented HaH program. However, best practices in medication management in HaH programs are yet to be established. Many challenges are unique to this evolving acute care model, in part due to regulatory oversight of medications and a lack of 24-hour on-site nursing care in the home setting. Barriers to self-management of medications include issues related to patients' ability to administer medications on their own, medication storage/disposal, and adequate education from healthcare professionals.

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Bristhis Journal of Clinical Pharmacy

Added value of patient and drug related factors to stratify drug-drug interaction alerts for risk of QT prolongation: development and validation of a risk prediction model

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Abstract

Aims

Many clinical decision support systems trigger warning alerts for drug-drug interactions potentially leading to QT prolongation and Torsades de Pointes (QT-DDIs). Unfortunately, there is over- and underalerting because stratification is only based on a fixed QT-DDI severity level. We aimed to improve QT-DDI alerting by developing and validating a risk prediction model considering patient and drug related factors.

Methods

We fitted 31 predictor candidates to a stepwise linear regression for 1000 bootstrap samples and selected the predictors present in 95% of the 1000 models. A final linear regression model with those variables was fitted on the original development sample (350 QT-DDIs). This model was validated on an external dataset (143 QT-DDIs). Both true QTc and predicted QTc were stratified into three risk levels (low, moderate, high). Stratification of QT-DDIs could be appropriate (predicted risk = true risk), acceptable (one risk level difference), or inappropriate (two risk levels difference).

Results

The final model included 11 predictors with the three most important being use of antiarrhythmics, age, and baseline QTc. Comparing current practice to the prediction model, appropriate stratification increased significantly from 37% to 54% appropriate QT-DDIs (increase of 17.5% on average [95% CI: +5.4% - +29.6%], padj = 0.006) and inappropriate stratification decreased significantly from 13% to 1% inappropriate QT-DDIs (decrease of 11.2% on average [95% CI: -17.7% - -4.7%]), padj = < 0.001).

Conclusion

The prediction model including patient and drug related factors outperformed QT-alerting based on QT-DDI severity alone and therefore is a promising strategy to improve DDI-alerting.

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Incidence of heart failure following exposure to a protein kinase inhibitor, a French population-based study

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Abstract

Aims

Pharmacovigilance signals of heart failure (HF) following exposure to protein kinase inhibitors (PKIs) have been detected in recent years. Our aim was to identify the PKIs most frequently associated with the development of HF.

Methods

Using the French National Healthcare Database, all patients newly exposed to a PKI between January 2011 and June 2014 were followed up for 18 months. Specific hospitalization diagnosis and long-term HF-related disease codes were used to identify HF patients. HF incidence rate ratios (IRRs) were measured and adjusted hazard ratios (aHRs) were estimated using a Cox model. Sensitivity analyses were performed to limit the potential indication and competitive risk bias.

Results

Thirteen PKIs were studied. Among the 49 714 new PKI users registered during the study period, the mean IRR of HF was 3.38 per 100 person-years, with a median time to onset of 155 days. We found a significant increase in the incidence of HF for six medicinal products: pazopanib (aHR = 2.42, 95% confidence interval [CI] 1.67-3.52), dasatinib (aHR = 2.22, 95% CI 1.42-3.44), ruxolitinib (aHR = 2.11, 95% CI 1.69-2.64), crizotinib (aHR = 1.71, 95% CI 1.07-2.72), everolimus (aHR = 1.45, 95% CI 1.26-1.67) and vemurafenib (aHR = 1.37, 95% CI 1.01-1.86). Sensitivity analyses were consistent with our primary analysis.

Conclusions

The current study provides knowledge on HF following exposure to a PKI. Additional studies could confirm these results for dasatinib, everolimus, pazopanib and ruxolitinib, and particularly for the two medicinal products with results slightly above the significance threshold, namely, crizotinib and vemurafenib, in our sensitivity analyses.

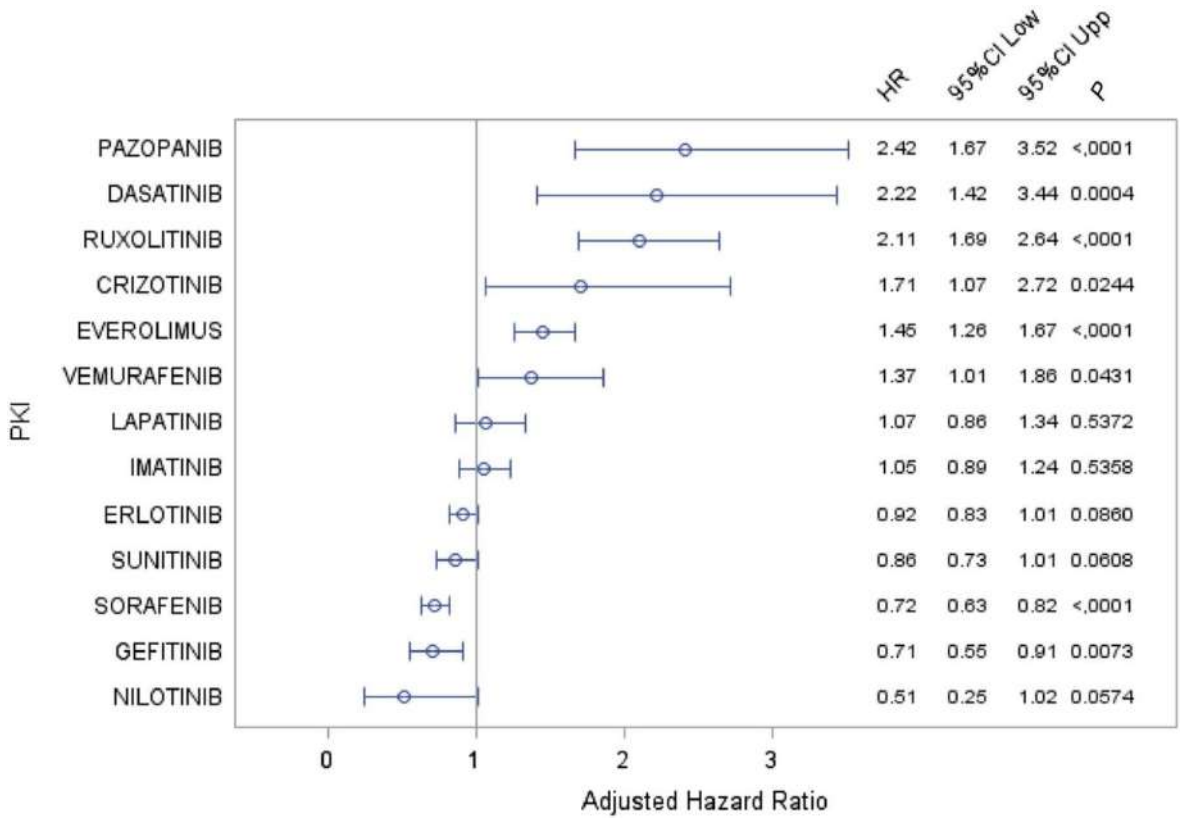

Figure 1: Hazard ratio estimates of the risk of heart failure of protein kinase inhibitors (PKIs) adjusted for age, sex, diabetes and cardiovascular history and stratified by defined daily dose equivalent. 95% CI Low, 95% confidence interval, lower limit; 95% CI Upp, 95% confidence interval, upper limit; HR, hazard ratio

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Drug Safety

Detectability of Medication Errors With a STOPP/START-Based Medication Review in Older People Prior to a Potentially Preventable Drug-Related Hospital Admission

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Abstract

Introduction

Multimorbidity and polypharmacy are risk factors for drug-related hospital admissions (DRAs) in the ageing population. DRAs caused by medication errors (MEs) are considered potentially preventable. The STOPP/START criteria were developed to detect potential MEs in older people.

Objective

The aim of this study was to assess the detectability of MEs with a STOPP/START-based in-hospital medication review in older people with polypharmacy and multimorbidity prior to a potentially preventable DRA.

Methods

Hospitalised older patients (n = 963) with polypharmacy and multimorbidity from the intervention arm of the OPERAM trial received a STOPP/START-based in-hospital medication review by a pharmacotherapy team. Readmissions within 1 year after the in-hospital medication review were adjudicated for drug-relatedness. A retrospective assessment was performed to determine whether MEs identified at the first DRA were detectable during the in-hospital medication review.

Results

In total, 84 of 963 OPERAM intervention patients (8.7%) were readmitted with a potentially preventable DRA, of which 72 patients (n = 77 MEs) were eligible for analysis. About half (48%, n = 37/77) of the MEs were not present during the in-hospital medication review and therefore were not detectable at that time. The pharmacotherapy team recommended a change in medication regimen in 50% (n = 20/40) of present MEs, which corresponds to 26% (n = 20/77) of the total identified MEs at readmission. However, these recommendations were not implemented.

Conclusion

MEs identified at readmission were not addressed by a prior single in-hospital medication review because either these MEs occurred after the medication review (~50%), or no recommendation was given during the medication review (~25%), or the recommendation was not implemented (~25%). Future research should focus on optimisation of the timing and frequency of medication review and the implementation of proposed medication recommendations.

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Gastrointestinal Bleeding on Oral Anticoagulation: What is Currently Known

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Abstract

Gastrointestinal bleeding (GIB) is the most common type of bleeding occurring in patients on oral anticoagulation. A meta-analysis of the landmark randomized controlled trials (RCTs) for patients with atrial fibrillation demonstrated that direct oral anticoagulants (DOACs) were associated with higher GIB rates compared to warfarin. However, significant heterogeneity existed between studies. While rivaroxaban, high-dose dabigatran, and high-dose edoxaban were associated with higher GIB rates than warfarin, GIB rates were similar between warfarin users and both apixaban and low-dose dabigatran users. Additionally, previous observational studies have yielded conflicting reports on whether GIB rates differ between warfarin and DOACs. Meta-analyses of observational studies demonstrated that warfarin is associated with lower rates of GIB compared to rivaroxaban, similar or lower rates compared to dabigatran, and higher rates compared to apixaban. Importantly, no RCT has compared individual DOACs directly and due to the different selection criteria of the initial RCTs, indirect comparisons between DOACs using these studies are unreliable. The best available information of comparisons between individual DOACs is therefore limited to observational studies. There is mounting evidence that suggests that rivaroxaban is associated with a higher risk of GIB compared to other DOACs. Finally, GIB induced by oral anticoagulation may have some positive aspects. Interestingly, there are studies that indicate oral anticoagulation facilitates colorectal cancer detection. Furthermore, results from RCTs and observational studies suggest that warfarin may even decrease the incidence of cancer.

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European Journal of Clinical Pharmacology

Real-world comparison of fidaxomicin versus vancomycin or metronidazole in the treatment of Clostridium difficile infection: a systematic review and meta-analysis

Jianfeng Dai, Jing Gong, Rui Guo

Abstract

Purpose

There is a lack of real-world evidence of the comparative effectiveness of fidaxomicin versus vancomycin or metronidazole for treating patients with Clostridium difficile (CDI) infection. No systematic evidence comparing these treatment regimens using real-world observational studies was published up to date. The goal of this study is to compare the fidaxomicin and vancomycin/metronidazole regimens in terms of treatment outcomes in CDI patients.

Methods

Systematic and comprehensive search was carried out in the following databases and search engines: EMBASE, Cochrane, MEDLINE, ScienceDirect, and Google Scholar from 1954 until January 2022. Newcastle–Ottawa (NO) scale was used to assess the risk of bias. Meta-analysis was carried out using random effects model, and pooled odds ratios (OR) with 95% confidence interval (CI) were reported.

Results

A total of 10 studies satisfied the inclusion criteria, most of them were with poorer quality. The pooled OR was 0.40 (95% CI: 0.09–1.68; I2 = 82.4%) for clinical cure and 2.02 (95% CI: 0.36–11.39; I2 = 88.4%) for sustained cure. We reported pooled OR of 0.69 (95% CI: 0.40–1.20; I2 = 65.7%) for the recurrence rate, 2.81 (95% CI: 1.08–7.29; I2 = 70.6%) for the treatment failure, and 0.73 (95% CI: 0.50–1.07; I2 = 0%) for all-cause mortality between patients that received fidaxomicin and vancomycin. The pooled OR was 0.71 (95% CI: 0.05–9.47; I2 = 69.6%) in terms of recurrence between patients receiving fidaxomicin and metronidazole.

Conclusion

Fidaxomicin and vancomycin/metronidazole regimens did not have significant difference in terms of treatment outcomes, such as clinical cure, sustained cure, recurrence, and all-cause mortality. However, there was significantly higher risk of treatment failure in CDI patients taking fidaxomicin.

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Pharmacological interventions for preventing atrial fibrillation after lung surgery: systematic review and meta-analysis

Xiaomei Wang, Demei Zhang, Yanxia Ren, Jingjing Han, Guangling Li, Xueya Guo

Abstract

Background

Postoperative atrial fibrillation/flutter (POAF) is one of the most common cardiac complications after lung surgery. We aimed to assess the safety and efficacy of pharmacological interventions for new-onset POAF prophylaxis in patients with lung cancer after lung surgery.

Methods

PubMed, Embase, Web of Science, Scopus, and the Cochrane Library were searched to identify randomized controlled trials comparing the effects of pharmacological interventions to prevent POAF following lung surgery.

Results

A total number of 19 studies with 2,922 participants were included. Pharmacological interventions significantly reduced the incidence of POAF (odds ratio [OR] 0.36, 95% confidence interval [95% CI] 0.26–0.52) while did not increase the incidence of severe pulmonary complications (OR 1.17, 95% CI 0.57–2.41) after lung surgery compared with placebo/usual care. Among different trials, beta-blockers appeared to be the most effective with an OR of 0.13 (95% CI, 0.07–0.27) and a number needed-to-treat (NNT) of 3.63 and was considered safe with no serious adverse events recorded. The risk of POAF decreased from 25.6 to 11.4% ($P < 0.001$) overall and from 34.2 to 6.7% ($P < 0.001$) with beta-blockers as monotherapy. Pharmacological interventions did not reduce the 30-day mortality (OR 0.89, 95% CI 0.43–1.84, $I2 = 0\%$), but showed a trend toward reducing major cardiovascular complications including myocardial ischemia/infarction, cardiac arrest, heart failure, and stroke (OR 0.41, 95% CI 0.13–1.29, $I2 = 0\%$).

Conclusion

Current clinical evidence supports the effectiveness of pharmacological intervention with beta-blockers, amiodarone, magnesium sulfate, or calcium-channel blockers to reduce the incidence of POAF after lung surgery in patients with lung cancer. In the absence of contraindications, prophylaxis with beta-blockers seems to be the most effective of the treatments studied.

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Higher FORTA (Fit fOR The Aged) scores are associated with poor functional outcomes, dementia, and mortality in older people

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Abstract

Purpose

Higher Fit fOR The Aged (FORTA) scores have been shown to be negatively associated with adverse clinical outcomes in older hospitalized patients. This has not been evaluated in other health care settings. The aim of this study was to examine the association of the FORTA score with relevant outcomes in the prospective AgeCoDe–AgeQualiDe cohort of community-dwelling older people. In particular, the longitudinal relation between the FORTA score and mortality and the incidence of dementia was evaluated.

Methods

Univariate and multivariate correlations between the FORTA score and activities of daily living (ADL) or instrumental activities of daily living (IADL) as well as comparisons between high vs. low FORTA scores were conducted.

Results

The FORTA score was significantly correlated with ADL/IADL at baseline and at all follow-up visits ($p < 0.0001$). ADL/IADL results of participants with a low FORTA score were significantly better than in those with high FORTA scores ($p < 0.0001$). The FORTA score was also significantly ($p < 0.0001$) correlated with ADL/IADL in the multivariate analysis. Moreover, the mean FORTA scores of participants with dementia were significantly higher ($p < 0.0001$) than in those without dementia at follow-up visits 6 through 9. The mean FORTA scores of participants who died were significantly higher than those of survivors at follow-up visits 7 ($p < 0.05$), 8 ($p < 0.001$), and 9 ($p < 0.001$).

Conclusion

In this study, an association between higher FORTA scores and ADL as well as IADL was demonstrated in community-dwelling older adults. Besides, higher FORTA scores appear to be linked to a higher incidence of dementia and even mortality.

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European Journal of Hospital Pharmacy

Drug-related bradycardia precipitating hospital admission in older adults: an ongoing problem

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Abstract

Background

Drug-related bradycardia (DRB) is a common clinical conundrum and can result in multiple hospital admissions as a result of the increased prescription of rate-limiting medications that can predispose to presyncopal or syncopal episodes.

Aim

To evaluate the incidence of DRB in elderly hospital inpatients.

Methods

We conducted a retrospective analysis of all patients admitted to our acute medical unit between November 2018 and February 2019 and identified patients over the age of 70 with more than one diurnal bradycardic episode during their admission. We extracted patient demographics, presenting complaint, admission 12-lead ECG and medications from the hospital electronic database.

Results

We screened 2312 adults and identified 100 patients over the age of 70 years with two or more episodes of diurnal bradycardia during their hospital admission. This constituted 4.32% of total admissions. Beta blockers were the most commonly prescribed rate-limiting medication (n=54, 87.1%), of which bisoprolol was the most frequently prescribed (n=41) and sinus bradycardia was the most commonly identified rhythm disturbance in our cohort of patients (n=41, 41%). Syncope was the most common presenting symptom and occurred in 23 patients, 14 (60.9%) of which were diagnosed with a DRB. Atrial fibrillation was more common in those with DRB compared with those with bradycardia not caused by medications (35.5% vs 10.5%, p=0.006), and atrial fibrillation was a significant predictor of DRB (OR=10.2, 95% CI 3.3 to 31.6, p<0.001).

Conclusion

Bradycardia is a significant cause of hospital admissions in older adults and can be avoided with pharmacovigilance. Caution should be exercised when initiating or changing the dose of rate-limiting agents in these patients; while those with atrial fibrillation should undergo regular review of their heart rate followed by appropriate medication dose adjustments.

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Clinical Pharmacology & therapeutics

Clinical Pharmacogenetics Implementation Consortium Guideline for CYP2C19 Genotype and Clopidogrel Therapy: 2022 Update

Craig R. Lee, Jasmine A. Luzum, Katrin Sangkuhl, Roseann S. Gammal, Marc S. Sabatine, Charles Michael Stein, David F. Kisor, Nita A. Limdi, Yee Ming Lee, Stuart A. Scott, Jean-Sébastien Hulot, Dan M. Roden, Andrea Gaedigk, Kelly E. Caudle, Teri E. Klein, Julie A. Johnson and Alan R. Shuldiner.

Abstract

CYP2C19 catalyzes the bioactivation of the antiplatelet prodrug clopidogrel, and CYP2C19 genotype impacts clopidogrel active metabolite formation. CYP2C19 intermediate and poor metabolizers who receive clopidogrel experience reduced platelet inhibition and increased risk for major adverse cardiovascular and cerebrovascular events. This guideline is an update to the 2013 Clinical Pharmacogenetics Implementation Consortium (CPIC) guideline for the use of clopidogrel based on CYP2C19 genotype and includes expanded indications for CYP2C19 genotype-guided antiplatelet therapy, increased strength of recommendation for CYP2C19 intermediate metabolizers, updated CYP2C19 genotype to phenotype translation, and evidence from an expanded literature review.

Table 1 Assignment of predicted CYP2C19 phenotype based on genotype

Predicted phenotype	Genotype	Examples of *CYP2C19* diplotypes[a]
CYP2C19 ultrarapid metabolizer	An individual carrying two increased function alleles	**17/*17*
CYP2C19 rapid metabolizer	An individual carrying one normal function allele and one increased function allele	**1/*17*
CYP2C19 normal metabolizer	An individual carrying two normal function alleles	**1/*1*
CYP2C19 likely intermediate metabolizer[b]	An individual carrying one normal function allele and one decreased function allele or one increased function allele and one decreased function allele or two decreased function alleles	**1/*9, *9/*17, *9/*9*
CYP2C19 intermediate metabolizer	An individual carrying one normal function allele and one no function allele or one increased function allele and one no function allele	**1/*2, *1/*3, *2/*17, *3/*17*
CYP2C19 likely poor metabolizer[b]	An individual carrying one decreased function allele and one no function allele	**2/*9, *3/*9*
CYP2C19 poor metabolizer	An individual carrying two no function alleles	**2/*2, *3/*3, *2/*3*
Indeterminate metabolizer	An individual carrying one or two uncertain function alleles	**1/*12, *2/*12, *12/*14*

Table 2 Antiplatelet therapy recommendations based on CYP2C19 phenotype when considering clopidogrel for cardiovascular indications

CYP2C19 phenotype[a]	Implications for phenotypic measures	Therapeutic recommendation	Classification of recommendation[b] ACS and/or PCI[c]
CYP2C19 ultrarapid metabolizer	Increased clopidogrel active metabolite formation; lower on-treatment platelet reactivity; no association with higher bleeding risk	If considering clopidogrel, use at standard dose (75 mg/day)	Strong
CYP2C19 rapid metabolizer	Normal or increased clopidogrel active metabolite formation; normal or lower on-treatment platelet reactivity; no association with higher bleeding risk	If considering clopidogrel, use at standard dose (75 mg/day)	Strong
CYP2C19 normal metabolizer	Normal clopidogrel active metabolite formation; normal on-treatment platelet reactivity	If considering clopidogrel, use at standard dose (75 mg/day)	Strong
CYP2C19 likely intermediate metabolizer	Reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid standard dose clopidogrel (75 mg) if possible. Use prasugrel or ticagrelor at standard dose if no contraindication	Strong[e]
CYP2C19 intermediate metabolizer	Reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid standard dose (75 mg) clopidogrel if possible. Use prasugrel or ticagrelor at standard dose if no contraindication	Strong
CYP2C19 likely poor metabolizer	Significantly reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid clopidogrel if possible. Use prasugrel or ticagrelor at standard dose if no contraindication	Strong[e]
CYP2C19 poor metabolizer	Significantly reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid clopidogrel if possible. Use prasugrel or ticagrelor at standard dose if no contraindication	Strong

Table 3 Antiplatelet therapy recommendations based on CYP2C19 phenotype when considering clopidogrel for neurovascular indications[a]

CYP2C19 phenotype[b]	Implications for phenotypic measures	Therapeutic recommendation	Classification of recommendation[c]	Other Considerations
CYP2C19 ultrarapid metabolizer	Increased clopidogrel active metabolite formation; lower on-treatment platelet reactivity	No recommendation	No recommendation	
CYP2C19 rapid metabolizer	Normal or increased clopidogrel active metabolite formation; normal or lower on-treatment platelet reactivity	No recommendation	No recommendation	
CYP2C19 normal metabolizer	Normal clopidogrel active metabolite formation; normal on-treatment platelet reactivity	If considering clopidogrel, use at standard dose (75 mg/day)	Strong	
CYP2C19 likely intermediate metabolizer	Reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Consider an alternative $P2Y_{12}$ inhibitor at standard dose if clinically indicated and no contraindication	Moderate[d]	Alternative $P2Y_{12}$ inhibitors not impacted by *CYP2C19* genetic variants include ticagrelor and ticlopidine. Prasugrel is contraindicated in patients with a history of stroke or TIA[e]
CYP2C19 intermediate metabolizer	Reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Consider an alternative $P2Y_{12}$ inhibitor at standard dose if clinically indicated and no contraindication	Moderate	Alternative $P2Y_{12}$ inhibitors not impacted by *CYP2C19* genetic variants include ticagrelor and ticlopidine. Prasugrel is contraindicated in patients with a history of stroke or TIA[e]
CYP2C19 likely poor metabolizer	Significantly reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid clopidogrel if possible. Consider an alternative $P2Y_{12}$ inhibitor at standard dose if clinically indicated and no contraindication	Moderate[d]	Alternative $P2Y_{12}$ inhibitors not impacted by *CYP2C19* genetic variants include ticagrelor and ticlopidine. Prasugrel is contraindicated in patients with a history of stroke or TIA[e]
CYP2C19 poor metabolizer	Significantly reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events	Avoid clopidogrel if possible. Consider an alternative $P2Y_{12}$ inhibitor at standard dose if clinically indicated and no contraindication	Moderate	Alternative $P2Y_{12}$ inhibitors not impacted by *CYP2C19* genetic variants include ticagrelor and ticlopidine. Prasugrel is contraindicated in patients with a history of stroke or TIA[e]

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Pharmacotherapy

Evaluating the evidence for sacubitril/valsartan across the continuum of heart failure

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Abstract

Since initial publication of the PARADIGM-HF trial in 2014, sacubitril/valsartan has been investigated in various settings to establish optimal use, further expanding its indications in patients with heart failure (HF). Although numerous studies have been published, until recently these have primarily involved post hoc analyses from the PARADIGM-HF study itself with a consistent focus on use of sacubitril/valsartan in patients with HF with reduced ejection fraction (HFrEF). This has led to a gap in the literature regarding utility of sacubitril/valsartan in other HF subpopulations. The aim of this review is to provide a summary of recent clinical trials further expanding use and guideline recommendations for sacubitril/valsartan. The findings of 15 studies, including clinical trials and post hoc analyses, are summarized and describe the use of sacubitril/valsartan in additional HF subpopulations, such as HFrEF following hospitalization for acute decompensated HF and advanced HF, HF with preserved ejection fraction (HFpEF), and HF postmyocardial infarction. In addition, three studies investigating timing of initiation, dose titration regimens, and cost-effectiveness are examined. Select ongoing trials are also reviewed to demonstrate the continued commitment to further advance care of patients with HF. This comprehensive review serves as a resource for health care providers who pursue optimal utilization of sacubitril/valsartan in their respective clinical practices.

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Annals of Pharmacotherapy

Economic Impact of Ambulatory Clinical Pharmacists in an Advanced Heart Failure Clinic

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Abstract

Background

Clinical pharmacists play pivotal roles in multidisciplinary heart failure (HF) teams through the management of HF pharmacotherapy, but no study has examined the economic impact of HF ambulatory clinical pharmacists in an advanced HF clinic.

Objective

The objective of the study was to evaluate the economic impact of HF ambulatory clinical pharmacist interventions in an advanced HF clinic using a cost-benefit analysis.

Methods

This prospective observational study detailed HF ambulatory clinical pharmacist interventions over 6 months in an advanced HF clinic in a single-center tertiary teaching hospital. The economic impact of the interventions was estimated based on the indirect cost savings with pharmacist interventions and direct cost savings recommendations. A cost-benefit analysis was performed to assess the cost of delivering the interventions compared with the benefits generated by clinical pharmacists. Results were reported as a benefit-cost ratio and net benefits.

Results

HF ambulatory clinical pharmacists made a total of 2,361 provider-accepted interventions over 6 months. Overall, the 3 most common intervention types were medication reconciliation (28.7%), dose change (20.8%), and addition of medication (12.3%). Anticoagulation (21.2%) was the most common intervened class of medication, followed by sodium-glucose cotransporter-2 inhibitor (12.3%) and angiotensin receptor neprilysin inhibitor (9.2%). The total net benefits were $55,553.24 over 6 months and the benefit-cost ratio was 1.55.

Conclusion and Relevance

The addition of cardiology clinical pharmacists to an advanced HF clinic may be financially justified and cost-beneficial.

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Pharmacoepidemiology & Drug Safety

Antibacterial-associated acute kidney injury among older adults: A post-marketing surveillance study using the FDA adverse events reporting system

Tichawona Chinzowu, Te-Yuan Chyou, Prasad S. Nishtala

Abstract

Purpose

Antibacterials induce a differential risk of acute kidney injury (AKI) in older adults. This study investigated the reporting risk of AKI associated with antibacterials using the individual case safety reports (ICSRs) submitted to the Food and Drug Administration Adverse Event Reporting System (FAERS) database.

Methods

A case/non-case method was used to assess AKI risk associated with antibacterials between 1 January 2000 and 30 September 2021. Cases were ICSRs for antibacterials with AKI as preferred terms included in the Medical Dictionary of Regulatory Activities (MedDRA) system organ classes 'Renal and urinary disorders' disorders. The analyses were completed on a de-duplicated data set containing only the recent version of the ICSR. Signals were defined by a lower 95% confidence interval (CI) of reporting odds ratio (ROR) ≥ 2, proportional reporting ratio (PRR) ≥ 2, information component (IC) > 0, Empirical Bayes Geometric Mean (EBGM) > 1 and reports ≥4. Sensitivity analyses were conducted a priori to assess the robustness of signals.

Results

A total of 3 680 621 reports on ADEs were retrieved from FAERS over the study period, of which 92 194 were antibacterial reports. Gentamicin, sulfamethoxazole, trimethoprim and vancomycin consistently gave strong signals of disproportionality on all four disproportionality measures and across the different sensitivity analyses: gentamicin (ROR = 2.95[2.51–3.46]), sulfamethoxazole (ROR = 2.97[2.68–3.29]), trimethoprim (ROR = 2.81[2.29–3.46]) and vancomycin (ROR = 3.35[3.08–3.64]).

Conclusion

Signals for gentamicin, sulfamethoxazole, trimethoprim and vancomycin were confirmed by using antibacterials as a comparator, adjusting for drug-related competition bias and event-related competition bias.

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Journal of Clinical Pharmacy and Therapeutics

The effect of chemotherapy on survival in oldest old patients with nonmetastatic triple negative breast cancer: A populationbased observational study

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Abstract

What is known and objective

Chemotherapy is the primary pharmacotherapy of triple-negative breast cancer (TNBC). But the benefit of adjuvant chemotherapy in the oldest old TNBC patients remains controversial. Hence, we designed this population based observational study in order to assess the survival benefit of adjuvant chemotherapy in oldest old TNBC patients with early-stage disease.

Methods

TNBC patients aged 80 years and older that with stage I to III invasive disease were identified in the surveillance, epidemiology, and end results cancer database from 2010 to 2016.

Results and discussion

Of 1611 patients enrolled, 1356 (84.17%) did not receive chemotherapy. Age, race, histology, grade, T stage, N stage, and radiation were found to be strong predictors of chemotherapy recipient by multivariate logistic regression analysis. Chemotherapy significantly prolonged overall survival (OS) (HR, 0.62, 95% CI: 0.49–0.79, $p < 0.001$), but did not significantly reduce breast cancer specific death (BCSD) (HR, 0.92, 95% CI: 0.63–1.35, $p = 0.675$). These results were further confirmed by propensity score matching analysis. Chemotherapy was associated with better OS in the subgroup of patients aged 80–84 years old (HR, 0.54, 95% CI: 0.40–0.74, $p < 0.001$), T2-4 stage disease (HR, 0.58, 95% CI: 0.44–0.76, $p < 0.001$), or grade 3–4 disease (HR, 0.54, 95% CI: 0.41–0.71, $p < 0.001$). However, chemotherapy did not reduce the cumulative incidence of BCSD in any subgroup.

What is new and conclusion

Chemotherapy should be considered for TNBC patients aged 80–84 years old, T2-4 disease, or grade 3–4 disease.

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14-day famciclovir treatment significantly reduces the incidence of postherpetic neuralgia in elderly patients with herpes zoster

Jie Kong MD, Huiping Wang MD, Yuanjun Liu PhD, Meng Xiao MM, Jing Wang PhD, Quanzhong Liu PhD

Abstract

What is known and objective

Pain is the main symptom of herpes zoster (HZ), whilst postherpetic neuralgia (PHN) is a long-term unbearable pain, which seriously affects the quality of life of patients and is also the most intractable problem for clinicians. Early antiviral treatment is considered as a key measure to reduce acute pain and PHN. Nevertheless, most patients still have long-term pain after 7 days of antiviral treatment, and some patients will develop PHN. This study aimed to investigate whether prolonged duration of antiviral therapy could reduce HZ acute pain and the occurrence of PHN.

Methods

The outpatient data of HZ patients over 50 years old who visited the Dermatology Department from January 2016 to May 2018 were retrospectively analysed. According to the different courses of treatment of famciclovir (FCV), the patients were divided into 7-day FCV group and 14-day FCV group. The numerical rating scale (NRS) score at the first visit and on the 7th, 14th and 21st days after the start of treatment, the adverse drug reactions and the incidence of PHN were compared between the two groups.

Results

A total of 219 patients were involved in the analysis. For acute pain control, the 14-day FCV group was better than the 7-day FCV group. For patients with mild initial pain, there was no significant difference in NRS between the two treatments. For patients with moderate-to-severe initial pain, the NRS in the 14-day FCV group was significantly lower than that of the 7-day FCV group on the 14th and 21st days after starting treatment. PHN occurred in patients with moderate-to-severe initial pain, and the incidence was significantly lower in the 14-day FCV group than in the 7-day FCV group. There was no significant difference in the number of adverse reactions between the two groups.

What is new and conclusion

Compared with the traditional 7-day antiviral therapy, the 14-day course of FCV can reduce the acute pain and the incidence of PHN in elderly patients with HZ, especially in patients with moderate to severe initial pain. Prolonging the course of medication did not increase the side effects.

Disponible en: **https://doi.org/10.1111/jcpt.13769**

Journal of the American Medical Directors Association

Self-Reported Frailty Screening Tools: Comparing Construct Validity of the Frailty Phenotype Questionnaire and FRAIL

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Abstract

Objectives

We examined the construct validity of 2 self-reported frailty questionnaires, the Frailty Phenotype Questionnaire (FPQ) and FRAIL, against the Cardiovascular Health Study frailty phenotype (CHS-FP).

Design

Cross-sectional data analysis of longitudinal prospective cohort study.

Settings and Participants

We included data from 230 older adults (mean age: 67.2 ± 7.4 years) from the "Longitudinal Assessment of Biomarkers for characterization of early Sarcopenia and Osteosarcopenic Obesity in predicting frailty and functional decline in community-dwelling Asian older adults Study" (GeriLABS 2) recruited between December 2017 and March 2019.

Methods

We compared area under receiver operating characteristic curves (AUC), agreement, correlation, and predictive validity against outcome measures [Short Physical Performance Battery, 5 times repeat chair stand (RCS-5), Frenchay activities index, International Physical Activity Questionnaire, life-space assessment, Social Functioning Scale 8 (SFS-8), EuroQol-5 dimensions (utility value)] using logistic regression adjusted for age, gender, and vascular risk factors. We examined concurrent validity across robust versus prefrail/frail for inflammatory blood biomarkers [tumor necrosis factor receptor 1 and C-reactive protein (CRP)] and dual-energy x-ray absorptiometry body composition [bone mineral density (BMD); appendicular lean mass index (ALMI), and fat mass index (FMI)].

Results

Prevalence of prefrail/frail was 25.7%, 14.8%, and 48.3% for FPQ, FRAIL, and CHS-FP, respectively. Compared with FRAIL, FPQ had better diagnostic performance (AUC = 0.617 vs 0.531, P = .002; sensitivity = 37.8% vs 18.0%; specificity = 85.6% vs 88.2%) and agreement (AC1-Stat = 0.303 vs 0.197). FPQ showed good predictive validity [RCS-5: odds ratio (OR) 2.38; 95% CI: 1.17–4.86; International Physical Activity Questionnaire: OR 3.62; 95% CI:1.78–7.34; SFS-8: OR 2.11; 95% CI: 1.64–5.89 vs FRAIL: all P > .05]. Only FRAIL showed concurrent validity for CRP, compared with both FPQ and FRAIL for TNF-R1. FRAIL showed better concurrent validity for BMD, FMI, and possibly ALMI, unlike FPQ (all P > .05).

Conclusions and Implications

Our results support complementary validity of FPQ and FRAIL in independent community-dwelling older adults. FPQ has increased case detection sensitivity with good predictive validity, whereas FRAIL demonstrates concurrent validity for inflammation and body composition. With better diagnostic performance and validity for blood biomarkers and clinical outcomes, FPQ has utility for early frailty detection in the community setting.

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European Journal of Internal Medecine

Comparative Effectiveness and Safety Between Apixaban, Dabigatran, Edoxaban, and Rivaroxaban Among Patients With Atrial Fibrillation

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Abstract

Background:

Current guidelines recommend using direct oral anticoagulants (DOACs) over warfarin in patients with atrial fibrillation (AF), but head-to-head trial data do not exist to guide the choice of DOAC.

Objective

To do a large-scale comparison between all DOACs (apixaban, dabigatran, edoxaban, and rivaroxaban) in routine clinical practice.

Design

Multinational population-based cohort study.

Setting

Five standardized electronic health care databases, which covered 221 million people in France, Germany, the United Kingdom, and the United States.

Participants

Patients who were newly diagnosed with AF from 2010 through 2019 and received a new DOAC prescription.

Measurements

Database-specific hazard ratios (HRs) of ischemic stroke or systemic embolism, intracranial hemorrhage (ICH), gastrointestinal bleeding (GIB), and all-cause mortality between DOACs were estimated using a Cox regression model stratified by propensity score and pooled using a random-effects model.

Results

A total of 527 226 new DOAC users met the inclusion criteria (apixaban, n = 281 320; dabigatran, n = 61 008; edoxaban, n = 12 722; and rivaroxaban, n = 172 176). Apixaban use was associated with lower risk for GIB than use of dabigatran (HR, 0.81 [95% CI, 0.70 to 0.94]), edoxaban (HR, 0.77 [CI, 0.66 to 0.91]), or rivaroxaban (HR, 0.72 [CI, 0.66 to 0.79]). No substantial differences were observed for other outcomes or DOAC–DOAC comparisons. The results were consistent for patients aged 80 years or older. Consistent associations between lower GIB risk and apixaban versus rivaroxaban were observed among patients receiving the standard dose (HR, 0.72 [CI, 0.64 to 0.82]), those receiving a reduced dose (HR, 0.68 [CI, 0.61 to 0.77]), and those with chronic kidney disease (HR, 0.68 [CI, 0.59 to 0.77]).

Limitation

Residual confounding is possible.

Conclusion

Among patients with AF, apixaban use was associated with lower risk for GIB and similar rates of ischemic stroke or systemic embolism, ICH, and all-cause mortality compared with dabigatran, edoxaban, and rivaroxaban. This finding was consistent for patients aged 80 years or older and those with chronic kidney disease, who are often underrepresented in clinical trials.

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Revista Clínica Española

Efectos en vida real de la adición de semaglutida subcutánea semanal al tratamiento con insulina en diabetes mellitus tipo 2

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Abstract

Objetivos

Determinar en la vida real los beneficios antropométricos y analíticos de la adición de semaglutida por vía subcutánea al tratamiento previo con insulina en pacientes con diabetes tipo 2.

Métodos

Estudio descriptivo, retrospectivo y abierto en el que se describen características clínicas y antropométricas de 117 pacientes diagnosticados de diabetes tipo 2 seguidos en las consultas externas de Endocrinología y Nutrición del Hospital Universitario Central de Asturias a lo largo de 53 semanas tras el inicio de tratamiento con semaglutida subcutánea (octubre-diciembre 2019). Todos los pacientes estaban en tratamiento previo con insulina, con o sin antidiabéticos orales.

Resultados

De los 117 pacientes iniciales, 17 no completaron el estudio debido a efectos adversos (náuseas, vómitos), decisión clínica y pérdida de seguimiento.

A los 12 meses (semana 53) del inicio de la semaglutida se obtuvo un descenso de HbA1c de 0,74% (IC 95% 0,59-1,14, p<0,05), así como de 3,61kg de peso (IC 95% 2,30-4,92, p<0,05), y de 15,88 UI de insulina total (IC 95% 10,98-20,74, p<0,05) respecto a las cifras basales. En pacientes sin análogo del receptor de GLP-1 (arGLP-1) previo, el efecto en la disminución de HbA1c, el peso y la dosis total de insulina fue estadísticamente significativo; sin embargo, los pacientes pretratados con arGLP-1 solo tuvieron mejoría en la reducción de peso. No se observaron eventos adversos graves.

Conclusiones

La adición de semaglutida subcutánea al tratamiento previo con insulina con o sin antidiabéticos orales induce una disminución de HbA1c, peso y dosis de insulina de forma segura. Este efecto es mayor en pacientes naïve para tratamiento con arGLP-1.

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JAMA Internal Medicine

Perioperative Gabapentin Use and In-Hospital Adverse Clinical Events Among Older Adults After Major Surgery

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Abstract

Importance

Gabapentin has been increasingly used as part of a multimodal analgesia regimen to reduce opioid use in perioperative pain management. However, the safety of perioperative gabapentin use among older patients remains uncertain.

Objective

To examine in-hospital adverse clinical events associated with perioperative gabapentin use among older patients undergoing major surgery.

Design, Setting, and Participants

This retrospective cohort study using data from the Premier Healthcare Database included patients aged 65 years or older who underwent major surgery at US hospitals within 7 days of hospital admission from January 1, 2009, to March 31, 2018, and did not use gabapentin before surgery. Data were analyzed from June 14, 2021, to May 23, 2022.

Exposures

Gabapentin use within 2 days after surgery.

Main Outcomes and Measures

The primary outcome was delirium, identified using diagnosis codes, and secondary outcomes were new antipsychotic use, pneumonia, and in-hospital death between postoperative day 3 and hospital discharge. To reduce confounding, 1:1 propensity score matching was performed. Risk ratios (RRs) and risk differences (RDs) with 95% CIs were estimated.

Results

Among 967 547 patients before propensity score matching (mean [SD] age, 76.2 [7.4] years; 59.6% female), the rate of perioperative gabapentin use was 12.3% (119 087 patients). After propensity score matching, 237 872 (118 936 pairs) gabapentin users and nonusers (mean [SD] age, 74.5 [6.7] years; 62.7% female) were identified. Compared with nonusers, gabapentin users had increased risk of delirium (4040 [3.4%] vs 3148 [2.6%]; RR, 1.28 [95% CI, 1.23-1.34]; RD, 0.75 [95% CI, 0.75 [0.61-0.89] per 100 persons), new antipsychotic use (944 [0.8%] vs 805 [0.7%]; RR, 1.17 [95% CI, 1.07-1.29]; RD, 0.12 [95% CI, 0.05-0.19] per 100 persons), and pneumonia (1521 [1.3%] vs 1368 [1.2%]; RR, 1.11 [95% CI, 1.03-1.20]; RD, 0.13 [95% CI, 0.04-0.22] per 100 persons), but there was no difference in in-hospital death (362 [0.3%] vs 354 [0.2%]; RR, 1.02 [95% CI, 0.88-1.18]; RD, 0.00 [95% CI, –0.04 to 0.05] per 100 persons). Risk of delirium among gabapentin users was greater in subgroups with high comorbidity burden than in those with low comorbidity burden (combined comorbidity index <4 vs ≥4: RR, 1.20 [95% CI, 1.13-1.27] vs 1.40 [95% CI, 1.30-1.51]; RD, 0.41 [95% CI, 0.28-0.53] vs 2.66 [95% CI, 2.08-3.24] per 100 persons) and chronic kidney disease (absence vs presence: RR, 1.26 [95% CI, 1.19-1.33] vs 1.38 [95% CI, 1.27-1.49]; RD, 0.56 [95% CI, 0.42-0.69] vs 1.97 [95% CI, 1.49-2.46] per 100 persons).

Conclusion and Relevance

In this cohort study, perioperative gabapentin use was associated with increased risk of delirium, new antipsychotic use, and pneumonia among older patients after major surgery. These results suggest careful risk-benefit assessment before prescribing gabapentin for perioperative pain management.

This study suggests that careful risk-benefit assessment is needed before prescribing gabapentin for perioperative pain management to older patients.

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REVISTAS GERIÁTRICAS

Age and Aging

Mobile health technology integrated care in older atrial fibrillation patients: a subgroup analysis of the mAFA-II randomised clinical trial

Yutao Guo, Giulio Francesco Romiti, Marco Proietti, Niccolò Bonini, Hui Zhang, Gregory Y H Lip, the mAF-App II Trial Investigators

Abstract

Background

The Mobile Health Technology for Improved Screening and Optimized Integrated Care in AF (mAFA-II) randomised trial demonstrated the efficacy of a mobile health (mHealth) technology-implemented 'Atrial fibrillation Better Care' (ABC) pathway-approach (mAFA intervention) in reducing the risk of adverse events in patients with atrial fibrillation (AF). Whether these benefits also apply to older patients is unclear. In this ancillary analysis, we evaluated the effect of mAFA intervention among older AF patients.

Methods

The mAFA-II trial enrolled adult AF patients across 40 centres in China. For this analysis, we defined older patients as those aged ≥75 years. Primary outcome was the composite of ischemic stroke or thromboembolism, all-cause death and rehospitalisation. The effect of mAFA intervention was assessed through multivariable Cox-regression models. We also evaluated the interaction between age and effect of the mAFA intervention in the main trial population.

Results

In this analysis, we included 1,163 AF patients ≥75 years (mean age: 82.6 ± 5.3 years, 43.1% females); 520 were allocated to mAFA intervention, 643 to usual care. mAFA intervention was associated with a significant reduction of the primary composite outcome (adjusted hazard ratio [aHR]: 0.58, 95% confidence interval [CI]: 0.35–0.97) and rehospitalisations alone (aHR: 0.47, 95%CI: 0.24–0.91). Significant interaction between age and mAFA intervention effect was observed for both the composite outcome ($P = 0.002$) and rehospitalisation alone ($P = 0.015$), with the effect decreasing as age increased, particularly among patients ≥80 years old.

Conclusions

A mHealth technology-implemented ABC pathway is effective in reducing adverse clinical outcomes in older AF patients. The benefits obtained with mAFA intervention were attenuated at extreme ages.

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Effectiveness of home-based exercise delivered by digital health in older adults: a systematic review and meta-analysis

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Abstract

Background

Regular physical exercise is essential to maintain or improve functional capacity in older adults. Multimorbidity, functional limitation, social barriers and currently, coronavirus disease of 2019, among others, have increased the need for home-based exercise (HBE) programmes and digital health interventions (DHI). Our objective was to evaluate the effectiveness of HBE programs delivered by DHI on physical function, health-related quality of life (HRQoL) improvement and falls reduction in older adults.

Results

Twenty-six studies have met the inclusion criteria, including 5,133 participants (range age 69.5 ± 4.0–83.0 ± 6.7). The HBE programmes delivered with DHI improve muscular strength (five times sit-to-stand test, −0.56 s, 95% confidence interval, CI −1.00 to −0.11; P = 0.01), functional capacity (Barthel index, 5.01 points, 95% CI 0.24–9.79; P = 0.04) and HRQoL (SMD 0.18; 95% CI 0.05–0.30; P = 0.004); and reduce events of falls (odds ratio, OR 0.77, 95% CI 0.64–0.93; P = 0.008). In addition, in the subgroup analysis, older adults with diseases improve mobility (SMD −0.23; 95% CI −0.45 to −0.01; P = 0.04), and balance (SMD 0.28; 95% CI 0.09–0.48; P = 0.004).

Conclusion

The HBE programmes carried out by DHI improve physical function in terms of lower extremity strength and functional capacity. It also significantly reduces the number of falls and improves the HRQoL. In addition, in analysis of only older adults with diseases, it also improves the balance and mobility.

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Frailty and cardiometabolic diseases: a bidirectional Mendelian randomisation study

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Abstract

Background

Frailty is strongly associated with cardiometabolic diseases in observational studies. However, whether the observed association reflects causality requires clarification. We performed a bidirectional Mendelian randomisation (MR) study to assess the causal relationship of frailty, measured by the frailty index (FI), with coronary artery disease (CAD), stroke and type 2 diabetes (T2D).

Methods

We extracted summary genome-wide association statistics for the FI (*N* = 175,226), CAD (Ncase = 60,801, Ncontrol = 123,504), stroke (Ncase = 40,585, Ncontrol = 406,111) and T2D (Ncase = 55,005, Ncontrol = 400,308) among individuals of European ancestry. Independent genetic variants associated with each phenotype at the genome-wide significance level were taken as instruments. Two-sample MR analyses were primarily conducted using the inverse-variance-weighted method, followed by various sensitivity and validation analyses.

Results

Genetically predicted higher FI was significantly associated with increased risk of CAD (odds ratio [OR] 1.52, 95% confidence interval [CI] 1.17–1.96) and T2D (OR 1.80, 95% CI 1.31–2.47) and suggestively associated with higher risk of stroke (OR 1.36, 95% CI 1.01–1.84). In the reverse direction analysis, genetic liability to CAD (beta 0.037, 95% CI 0.019–0.055), stroke (beta 0.096, 95% CI 0.051–0.141) and T2D (beta 0.047, 95% CI 0.036–0.059) showed significant associations with increased FI. Results were stable across sensitivity and validation analyses.

Conclusion

Our study strengthened the evidence for a bidirectional causal association between frailty and cardiometabolic diseases. Further understanding of this association will be critical for the optimisation of care in older adults.

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Drugs & Aging

Difficult-to-Treat Rheumatoid Arthritis in Older Adults: Implications of Ageing for Managing Patients

Marta Novella-Navarro, Alejandro Balsa

Abstract

Difficult-to-treat rheumatoid arthritis is a heterogeneous term in which patients may present with difficulties in their management for different reasons. This can ultimately lead to patients being exposed to multiple treatments because of inefficacy (resulting from mechanisms intrinsic to rheumatoid arthritis or from non-inflammatory causes such as chronic pain syndrome or structural damage, among others), toxicity or adverse effects that may be linked to comorbidities. One particular group in which such characteristics may be more patent is older patients. Increasing life expectancy, an ageing population and the late onset of rheumatoid arthritis have led to an increased interest in the particularities of treating older patients. This may pose a challenge for physicians, as ageing has implications for optimal patient treatment owing to the potential presence of comorbidities, the risk of adverse events and perceptions of disease status by both physicians and patients. All of these factors may have implications for classifying and managing patients aged > 65 years as difficult-to-treat rheumatoid arthritis, as these patients could be misclassified. This can occur when a significant proportion may still exhibit signs of active disease but not necessarily be difficult to treat because the treatment criterion has not been fulfilled. Alternatively, patients may be exposed to multiple biologic/targeted disease-modifying antirheumatic drugs because of contraindications and/or comorbid conditions. Treatment-to-target strategies and an adequate assessment of inflammatory rheumatoid arthritis activity in older patients should be undertaken, taking special care with associated comorbidities, polypharmacy and risk profiles. Such an approach can help to ensure appropriate treatment for older adults and avoid the misclassification of difficult-to-treat patients.

Disponible en: https://link.springer.com/article/10.1007/s40266-022-00976-5

A Systematic Review of the Current Evidence from Randomised Controlled Trials on the Impact of Medication Optimisation or Pharmacological Interventions on Quantitative Measures of Cognitive Function in Geriatric Patients

Farhad Pazan, Mirko Petrovic, Antonio Cherubini, et al

Background

Cognitive decline is common in older people. Numerous studies point to the detrimental impact of polypharmacy and inappropriate medication on older people's cognitive function. Here we aim to systematically review evidence on the impact of medication optimisation and drug interventions on cognitive function in older adults.

Methods

A systematic review was performed using MEDLINE and Web of Science on May 2021. Only randomised controlled trials (RCTs) addressing the impact of medication optimisation or pharmacological interventions on quantitative measures of cognitive function in older adults (aged > 65 years) were included. Single-drug interventions (e.g., on drugs for dementia) were excluded. The quality of the studies was assessed by using the Jadad score.

Results

Thirteen studies met the inclusion criteria. In five studies a positive impact of the intervention on metric measures of cognitive function was observed. Only one study showed a significant improvement of cognitive function by medication optimisation. The remaining four positive studies tested methylphenidate, selective oestrogen receptor modulators, folic acid and antipsychotics. The mean Jadad score was low (2.7).

Conclusion

This systematic review identified a small number of heterogenous RCTs investigating the impact of medication optimisation or pharmacological interventions on cognitive function. Five trials showed a positive impact on at least one aspect of cognitive function, with comprehensive medication optimisation not being more successful than focused drug interventions. More prospective trials are needed to specifically assess ways of limiting the negative impact of certain medication in particular and polypharmacy in general on cognitive function in older patients.

Disponible en: https://link.springer.com/article/10.1007/s40266-022-00980-9

European Geriatric Medicine

Pharmacist-driven antimicrobial stewardship program in a long-term care facility by assessment of appropriateness

María Rosa Cantudo-Cuenca, Alberto Jimenez-Morales & Juan Enrique Martínez-de la Plata

Aim

Antimicrobials are the most frequently prescribed drugs in long-term care facilities (LTCF). Antibiotic stewardship programs (ASP) are coordinated interventions promoting the responsible use of antibiotics to improve patient outcomes and reduce antibiotic-resistant bacteria. The objectives are to evaluate the effectiveness of a pharmacist-led ASP in a LTCF, to characterize antibiotic therapy and assess the appropriateness of antibiotic prescriptions.

Findings

Educational interventions and weekly prospective audits and feedback have resulted in significant decreases in antibiotic use and costs of antibiotics.

Disponible en: https://link.springer.com/article/10.1007/s41999-022-00715-4

Journal of Geriatric Oncology

Effect of a geriatric unit in the outcomes of hospitalized older Mexican adults with cancer: A case-control study

Gretell Henriquez-Santos, Andrea De la O-Murillo, José Alberto Avila-Funes, Enrique Soto-Perez-de-Celis

Abstract

Introduction

Geriatric interventions may improve the care of hospitalized older adults with cancer, but information regarding their effect on geriatric-specific outcomes is lacking. We studied the effect of a specialized geriatrician-led inpatient geriatric management unit compared with a conventional internal medicine ward on the outcomes of hospitalized older adults with cancer in Mexico.

Materials and Methods

Case-control study including persons aged ≥65 years with solid malignancies who had a cancer-related hospitalization at a university-affiliated hospital in Mexico City. Patients hospitalized in a geriatric unit (cases) were paired 1:2 with those in internal medicine wards (controls). Matching criteria included: age (+/− five years), tumor type (according to International Classification of Diseases [ICD]-10 code), and admission date (+/− three months). The association between being hospitalized in the geriatric unit on various outcomes was determined using conditional logistic regression models.

Results

One hundred cases and 200 controls were included. Mean age was 75.3 years (standard deviation 6.4 years) and 53% had gastrointestinal tumors. No difference in median length-of-stay was found between cases and controls (9.0 days, vs. 9.5 days, $p = 0.34$). Hospitalization in the geriatric unit was associated with a reduced risk of delirium (odds ratio [OR] 0.18, 95% confidence interval [CI] 0.04–0.80). Being hospitalized in the geriatric unit was not associated with an effect on hospital-acquired complications (OR 0.83, 95% CI 0.47–1.45) or in-hospital mortality (OR 1.82, 95% CI 0.32–10.18).

Discussion

Among older Mexican adults hospitalized for a cancer-related diagnosis, receiving care in a geriatric management unit was associated to a decreased risk of delirium, without influencing other outcomes.

Disponible en: https://doi.org/10.1016/j.jgo.2022.11.004

Geriatric assessment in hematology scale predicts treatment tolerability in older patients diagnosed with hematological malignancies: The RETROGAH study

Javier de la Rubia, Bernardo González, Alfonso J. Cruz-Jentoft, Patricia Fernández, David Vilanova, Santiago Bonanad

Abstract

Introduction

The GAH (Geriatric Assessment in Hematology) scale is a psychometrically valid tool aimed at identifying older patients with hematological malignancies at higher risk of treatment-related toxicity. Our objective in this study was to determine the weights for each dimension of the GAH scale and the cut-off point to reliably predict treatment tolerability in this population, estimated by a weighted receiver operating characteristic (ROC) analysis and quantified by the area under the curve (AUC).

Material and Methods

The RETROGAH was a retrospective cohort study including 126 patients who had previously participated in the GAH study. Patients were ≥ 65 years old with newly diagnosed myelodysplastic syndrome (MDS)/acute myeloid leukemia (AML), multiple myeloma (MM), or chronic lymphoid leukemia (CLL) and treated with standard front-line therapy within three months after having completed the GAH scale.

Results

The optimal cut-off value of the GAH total score to discriminate patients at higher risk of treatment toxicity was 42, with 68.5% sensitivity and 55.8% specificity. Using this value, 66.1% of patients evaluated were found to develop some type of toxicity. The AUC was 0.6259 (95% CI: 0.512–0.739; $p = 0.035$).

Discussion

The GAH scale not only would enable clinicians to individualize therapy based on individual risk of toxicity but also discriminate patients that will benefit most from intensive treatments from those requiring an adapted approach. While futures studies in clinical practice may improve the model and overcome its limitations, the GAH scale should not be used alone when making treatment decisions.

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Referral to and receipt of allogeneic hematopoietic stem cell ransplantation in older adults with acute myeloid leukemia

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Abstract

Introduction

Recent data have shown improved outcomes in selected older adults with acute myeloid leukemia (AML) following allogeneic hematopoietic stem cell transplantation (HSCT). Nonetheless, practice patterns for referring and performing HSCT vary. We aimed to evaluate referral, utilization, and reasons for not referring/proceeding to HSCT in older adults with AML.

Materials and Methods

This is a single center retrospective analysis of patients aged ≥60 years diagnosed with AML evaluating rates of HSCT referral and utilization. Fisher's exact test was used to compare rates of referral and utilization across age groups and years of diagnosis.

Results

Median age of the 97 patients was 70 years (range 61–95); 30% (29/97) were referred for HSCT and of these, 69% (20/29) received HSCT. Common documented reasons (can be multiple) for not referring were performance status (n = 21), advanced age (n = 16), patient refusal (n = 15), refractory disease (n = 14), and prohibitive comorbidity (n = 6). Among patients who were referred but did not receive HSCT (n = 9/29), documented reasons for not proceeding with HSCT were refractory disease (n = 5), advanced age (n = 2), and prohibitive comorbidity (n = 2). HSCT referral and utilization rates significantly decreased with age ($p < 0.01$) but were generally stable over time from 2014 to 2017 ($p = 0.40$ for referral and $p = 0.56$ for utilization).

Discussion

Despite improvements in supportive care and HSCT techniques, HSCT referral and utilization rates remained low among older adults with AML but stable over time.

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Autralian Prescriber

Treating osteoporosis: risks and management

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Abstract

Osteoporosis, osteopenia and minimal trauma fractures are becoming increasingly common in the ageing population. Fractures cause increases in morbidity and mortality and have a significant financial impact on the healthcare system and society.

Addressing risk factors for osteoporosis early may prevent or delay the onset of fractures and use of drugs. Calcium and vitamin D supplementation may benefit people with a high risk of deficiency (e.g. institutionalised older people) but may not be required in people without risk factors. Impact and resistance exercises and physical activity can increase bone density and prevent falls.

Antiresorptive drugs such as bisphosphonates and denosumab remain first-line treatment options for osteoporosis. The ongoing need for bisphosphonates should be assessed after five years and treatment may then be interrupted in some patients. Progressive bone loss will recur slowly. Denosumab therapy should not be interrupted without switching to another therapy, as post-treatment bone loss can progress rapidly. All patients will need ongoing monitoring and most will require some long-term therapy once started.

Raloxifene may be considered in women who do not tolerate first-line antiresorptive drugs. Romosozumab is a new anabolic treatment for osteoporosis and, together with teriparatide, is subsidised as second-line therapy for individuals with severe disease and multiple fractures. Specialist referral should be considered for patients who sustain fractures while undergoing osteoporosis therapy.

Table 2 **Adverse effects of osteoporosis drugs**

Drug	Common adverse events	Notable rare adverse events
Oral bisphosphonates	Hypocalcaemia Upper gastrointestinal effects (gastro-oesophageal reflux, erosive oesophagitis)	Osteonecrosis of the jaw* Atypical femoral fractures†
Intravenous bisphosphonates	Hypocalcaemia Flu-like illness following infusion	Osteonecrosis of the jaw* Atypical femoral fractures†
Denosumab	Hypocalcaemia Injection-site reactions Atraumatic vertebral fractures following discontinuation	Osteonecrosis of the jaw* Atypical femoral fractures†
Raloxifene	Hot flushes Venous thromboembolism	Stroke
Teriparatide	Hypercalcaemia Injection-site reactions	Theoretical risk of osteosarcoma
Romosozumab	Injection-site reactions	Possible increased risk of major adverse cardiovascular events (myocardial infarction, stroke) Osteonecrosis of the jaw* (few case reports) Atypical femoral fractures† (few case reports)

* Risk factors include dental extractions, implants, poorly fitting dentures, pre-existing dental disease, glucocorticoid use and smoking.
† Risk factors include rheumatoid arthritis, increased femoral bowing, thicker lateral cortices at the femoral shaft and Asian ethnicity.

Disponible en: https://www.nps.org.au/australian-prescriber/articles/treating-osteoporosis-risks-and-management