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REVISIÓN BIBLIOGRÁFICA DICIEMBRE 2021: Selección de artículos

REVISTAS GERIÁTRICAS

Archives of Gerontology and Geriatrics

Association between anticholinergic drug burden with sarcopenia, anthropometric measurements, and comprehensive geriatric assessment parameters in older adults

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Abstract

Background

Older patients use multiple drugs due to their comorbidities and most of these drugs have anticholinergic drug burden (ADB). We aimed to investigate the association between ADB and sarcopenia, anthropometric measurements, and comprehensive geriatric assessment (CGA) parameters in older adults.

Methods

Patients ≥65 years who applied to geriatrics outpatient clinic between January 2019-March 2020 were included. Patients with cognitive dysfunction were excluded. CGA tests were conducted on patients. Handgrip strength (HGS), bioelectrical impedance analysis (BIA), and a 6-meter walking test were used for sarcopenia definition. The Anticholinergic Cognitive Burden (ACB) scale was used to calculate the ADB.

Results

Totally 256 patients (women/men:180/76) were included. The mean age was 82±6.8. Two groups were created as without ADB (n=116) and with ADB (n=140). Sarcopenia was higher in the ADB group (p=0.04). In women and men as ADB increased HGS decreased (respectively; p=0.023 r=-0.170, p=0.031 r=-0.248) and Basic Activities of Daily Living (BADL) test score increased (respectively; p= <0.001 r= 0.292, p=0.04 r= 0.244). In the linear regression (LR) analysis age and BADL test score had significant association with ADB in women (respectively; p=0.001, p=0.023)

Conclusion

The finding that sarcopenia is higher in the patients with ADB and HGS decreases as ADB increases, suggesting that ADB may be a risk factor for sarcopenia by decreasing HGS. Also, it has

been determined that, especially in older women, as ADB increases, the dependence on basic daily living activities increases.

Disponible en: https://doi.org/10.1016/j.archger.2021.104618

BMC Geriatrics

Persistent polypharmacy and fall injury risk: the Health, Aging and Body Composition Study

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Abstract

Background

Older adults receive treatment for fall injuries in both inpatient and outpatient settings. The effect of persistent polypharmacy (i.e. using multiple medications over a long period) on fall injuries is understudied, particularly for outpatient injuries. We examined the association between persistent polypharmacy and treated fall injury risk from inpatient and outpatient settings in community-dwelling older adults.

Methods

The Health, Aging and Body Composition Study included 1764 community-dwelling adults (age 73.6 ± 2.9 years; 52% women; 38% black) with Medicare Fee-For-Service (FFS) claims at or within 6 months after 1998/99 clinic visit. Incident fall injuries (N = 545 in 4.6 ± 2.9 years) were defined as the initial claim with an ICD-9 fall E-code and non-fracture injury, or fracture code with/without a fall code from 1998/99 clinic visit to 12/31/08. Those without fall injury (N = 1219) were followed for 8.1 ± 2.6 years. Stepwise Cox models of fall injury risk with a time-varying variable for persistent polypharmacy (defined as ≥6 prescription medications at the two most recent consecutive clinic visits) were adjusted for demographics, lifestyle characteristics, chronic conditions, and functional ability. Sensitivity analyses explored if persistent polypharmacy both with and without fall risk increasing drugs (FRID) use were similarly associated with fall injury risk.

Results

Among 1764 participants, 636 (36%) had persistent polypharmacy over the follow-up period, and 1128 (64%) did not. Fall injury incidence was 38 per 1000 person-years. Persistent polypharmacy increased fall injury risk (hazard ratio [HR]: 1.31 [1.06, 1.63]) after adjusting for covariates. Persistent polypharmacy with FRID use was associated with a 48% increase in fall injury risk (95%CI: 1.10, 2.00) vs. those who had non-persistent polypharmacy without FRID use. Risks for persistent polypharmacy without FRID use (HR: 1.22 [0.93, 1.60]) and non-persistent

polypharmacy with FRID use (HR: 1.08 [0.77, 1.51]) did not significantly increase compared to non-persistent polypharmacy without FRID use.

Conclusions

Persistent polypharmacy, particularly combined with FRID use, was associated with increased risk for treated fall injuries from inpatient and outpatient settings. Clinicians may need to consider medication management for FRID and other fall prevention strategies in community-dwelling older adults with persistent polypharmacy to reduce fall injury risk.

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Drugs and Aging

Anticholinergic and Sedative Medications and Dynamic Gait Parameters in Older Patients

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Abstract

Background

Anticholinergic and sedative medications are associated with poorer physical function in older age. Gait and physical function have traditionally been assessed with the time needed to execute objective function tests. Accelerometer-based gait parameters provide a precise capturing of gait dynamics and patterns and as such have added value.

Objectives

This study examined the associations between cumulative exposure to anticholinergic and sedative medications and gait dimensions as assessed with accelerometer-based dynamic gait parameters.

Methods

Data were collected from outpatients of a diagnostic geriatric day clinic who underwent a comprehensive geriatric assessment (CGA). Cumulative exposure to anticholinergic and sedative medications was quantified with the Drug Burden Index (DBI), a linear additive pharmacological dose–response model. From a total of 22 dynamic gait parameters, the gait dimensions ‘Regularity’, ‘Complexity’, ‘Stability’, ‘Pace’, and ‘Postural Control’ were derived using factor analysis (and standardized total scores for these dimensions were calculated accordingly). Data

were analyzed with multivariable linear regression analysis, in which adjustment was made for the covariates age, gender, body mass index (BMI), Mini Mental State Examination (MMSE) score, Charlson Comorbidity Index (CCI) including dementia, and number of medications not included in the DBI.

Results

A total of 184 patients participated, whose mean age was 79.8 years (± SD 5.8), of whom 110 (60%) were women and of whom 88 (48%) had polypharmacy (i.e., received treatment with ≥5 medications). Of the 893 medications that were prescribed in total, 157 medications (17.6%) had anticholinergic and/or sedative properties. Of the patients, 100 (54%) had no exposure (DBI = 0), 42 (23%) had moderate exposure (0 > DBI ≤ 1), while another 42 (23%) had high exposure (DBI >1) to anticholinergic and sedative medications. Findings showed that high cumulative exposure to anticholinergic and sedative medications was related with poorer function on the Regularity and Pace dimensions. Furthermore, moderate and high exposure were associated with poorer function on the Complexity dimension.

Conclusions

These findings show that in older patients with comorbidities, cumulative anticholinergic and sedative exposure is associated with poorer function on multiple gait dimensions.

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Journal of Clinical Interventions In Aging

Risk Factors for Hospital Readmission and Death After Discharge of Older Adults from Acute Geriatric Units: Taking the Rank of Admission into Account

Visade F , Babykina G, Puisieux F, Bloch F , Charpentier A, Delecluse C, Loggia G, Lescure P, Attier-Żmudka J, Gaxatte C, Deschasse G, Beuscart JB

Objective:

To analyze the impact of the number of hospital readmissions on the risks of further hospital readmission and death after adjustment for a range of risk factors.

Methods:

We performed a multicentre prospective study of the DAMAGE cohort in the Hauts-de-France region of France. Patients aged 75 and over hospitalized initially in an acute geriatric unit (AGU) were included and followed up for 12 months. The risk of hospital readmission was analyzed using a Cox model, and its extension for recurrent events and the risk of death were analyzed using a Cox model for time-dependent variables.

Results:

A total of 3081 patients were included (mean (SD) age: 86.4 (5.5)). In the multivariate analysis, the relative risk (95% confidence interval [CI]) of hospital readmission rose progressively to 2.66 (1.44; 5.14), and the risk of death rose to 2.01 (1.23; 3.32) after five hospital admissions, relative to a patient with no hospital readmissions. The number of hospital readmissions during the follow-up period was the primary risk factor and the best predictor of the risk of hospital readmission and the risk of death.

Conclusion:

Hospital readmission is the primary risk factor for further hospital readmissions and for death in older subjects discharged from an AGU.

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REVISTAS FARMACÉUTICAS

British Journal of Clinical Pharmacology

Proton pump inhibitors are associated with incident type 2 diabetes mellitus in a prospective population-based cohort study

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Abstract

Aim

To investigate the association between proton pump inhibitors (PPIs) and risk of incident diabetes in a follow-up study and to investigate its potential mechanisms.

Methods

A total of 9531 individuals without type 2 diabetes (T2DM) at baseline were included from the Rotterdam Study, a prospective population-based cohort of 14 926 individuals aged 45 years or older. During the study period (1 April 1997 to 1 January 2012) all incident cases of T2DM were enrolled. We used multivariable linear regression analysis to investigate the associations of baseline PPI use and various serum biomarkers (eg, serum magnesium, insulin-like growth factor 1) which might modify the association. Thereafter, we excluded prevalent PPI users and performed a Cox proportional hazard regression analysis to explore the time-varying effect of incident PPI use on T2DM during follow-up.

Results

Baseline use of a PPI was associated with increased serum levels of fasting insulin (0.091 pmoL/L, 95% confidence interval [CI] 0.049, 0.133), homeostasis model assessment-insulin resistance (0.100, 95% CI 0.056, 0.145) and C-reactive protein (0.29 mg/L, 95% CI 0.198, 0.384), but decreased levels of magnesium (−0.009 mmol/L, 95% CI −0.014, −0.004) and IGF-1 (−0.805 nmoL/L, 95% CI −1.015, −0.595). After adjustment for risk factors such as physical activity and body mass index/waist-to-hip ratio, current use of PPI was associated with an increased risk of incident T2DM (hazard ratio [HR] 1.69, 95% CI 1.36-2.10). The effect was dose-dependent with the highest risk (HR 1.88, 95% CI 1.29-2.75) in those on more than one defined daily dose.

Conclusion

New users of PPIs during follow-up had a significantly higher dose-dependent risk of incident diabetes. We suggest vigilance regarding their potential adverse effect on glucose homeostasis.

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The association of polypharmacy with functional decline in elderly patients undergoing cardiac surgery

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Abstract

Aim

Identifying preoperative risk factors in older patients becomes more important to reduce adverse functional outcome. This study investigated the association between preoperative medication use and functional decline in elderly cardiac surgery patients and compared polypharmacy as a preoperative screening tool to a clinical frailty assessment.

Methods

This sub-study of the Anaesthesia Geriatric Evaluation study included 518 patients ≥ 70 years undergoing elective cardiac surgery. The primary outcome was functional decline, defined as a worse health related quality of life or disability one year after surgery. The association between polypharmacy (i.e. ≥5 prescriptions and <10 prescriptions) or excessive polypharmacy (i.e. ≥10 prescriptions) and functional decline was investigated using multivariable Poisson regression. Discrimination, calibration and reclassification indices were used to compare preoperative screening tools for patient selection.

Results

Functional decline was reported in 284 patients (55%) and preoperative polypharmacy and excessive polypharmacy showed higher risks (aRRs 1.57, 95% CI 1.23 – 1.98 and 1.93, 95% CI 1.48 – 2.50, respectively). Besides cardiovascular medication, proton pomp inhibitors and central nervous system medication were significantly associated with functional decline. Discrimination between models with polypharmacy or frailty was similar (AUC 0.67, 95% CI 0.61 – 0.72). The net reclassification index improved when including polypharmacy to the basic model (17%, 95% CI 0.06 – 0.27).

Conclusions

Polypharmacy is associated with functional decline in elderly cardiac surgery patients. A preoperative medication review is easily performed and could be used as screening tool to identify patients at risk for adverse outcome after cardiac surgery.

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Farmacia Hospitalaria

Terapia antimicrobiana personalizada en pacientes críticos y en edad avanzada

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Objetivo:

La terapia personalizada en el tratamiento de las infecciones es esencial para garantizar la optimización de los niveles de fármaco lcanzados en el paciente tratado. Adicionalmente, esta estrategia, juntamente con el conocimiento de la actividad antimicrobiana de estos fármacos, isminuye la posibilidad de desarrollar resistencias bacterianas y mejora el perfil de seguridad de estos fármacos. Las terapias por vías alternativas, como la inhalada, y el soporte de la información facilitada por modelos farmacocinéticos son esenciales debido a la limitación de la actividad aportada por los nuevos antimicrobianos.

Método:

Se presenta una revisión no sistemática de la literatura como medida de orientación de la problemática y soluciones a lo expuesto anteriormente. Se ha efectuado una búsqueda de artículos de alta calidad sobre el tópico planteado.

Resultados:

Se detectaron 231 artículos que sufrieron una selección posterior, en base a la calidad de los trabajos valorada por un equipo de cinco farmacéuticos clínicos y un médico intensivista. Finalmente, se incluyeron 153 artículos que soportan la revisión que se ha desarrollado.

Conclusiones:

La población geriátrica y la integrada por pacientes críticos presenta la necesidad de utilización de los antimicrobianos con una estrecha monitorización. Vías de administración recomendadas en la primera, están desaconsejadas en la segunda. La vía inhalada es una vía que suele relacionarse con elevadas concentraciones en pacientes con infecciones respiratorias. Los modelos farmacocinéticos son un soporte de gran valor para poblaciones como la geriátrica debido a que es mayoritariamente excluida de los ensayos clínicos.

Disponible en: http://revistafarmaciahospitalaria.sefh.es/gdcr/index.php/fh/article/view/11760

Pharmacotherapy

Anticholinergic medication burden and cognitive function in participants of the ASPREE study

Jonathan C. Broder,Joanne Ryan,Raj C. Shah,Jessica E. Lockery,Suzanne G. Orchard,Julia F.-M. Gilmartin-Thomas,Michelle A. Fravel,Alice J. Owen,Robyn L. Woods

Abstract

Study Objective

What is the association between anticholinergic burden and specific domains of cognitive function in older adults who are initially without major cognitive impairment?

Design

Post-hoc analysis of longitudinal observational data from the ASPirin in Reducing Events in the Elderly (ASPREE) study.

Patients

19,114 participants from Australia and the United States aged 70 years and older (65 years and older for US minorities) were recruited and followed for a median of 4.7 years. At enrollment, participants were free of known cardiovascular disease, major physical disability, or dementia.

Measurements

Cognitive assessments administered at baseline and biennially at follow-up visits included the Modified Mini-Mental State examination (3MS), Hopkins Verbal Learning Test–Revised (HVLT-R) delayed recall, Controlled Oral Word Association Test (COWAT), and Symbol Digit Modalities Test (SDMT). Anticholinergic burden was calculated at baseline using the Anticholinergic Cognitive Burden (ACB) scale and grouped as scores of 0 (no burden), 1-2 (low to moderate), or 3+ (high).

Main Results

Linear mixed effects models were used to assess the relationship between ACB score and cognition over time. After adjusting for sex, age, education, minority status, smoking status, hypertension, diabetes, depression, chronic kidney disease, country, and frailty, participants with a high ACB score had worse performance over time for 3MS (Adjusted [Adj] B=-0.092, P=0.034), HVLT-R delayed recall (Adj B=-0.104, P<0.001), COWAT (Adj B=-0.151, P<0.001), and SDMT (Adj B=-0.129, P=0.026), than participants with an ACB score of 0. A low to moderate ACB score was also associated with worse performance over time for HVLT-R delayed recall (Adj B=-0.037, P=0.007) and COWAT (Adj B=-0.065, P=0.003), compared to those with no ACB.

Conclusions

Anticholinergic burden predicts worse cognitive function over time in initially dementia-free older adults, particularly for executive function (COWAT) and episodic memory (HVLT-R).

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Clinical Pharmacology & Therapeutics

Serotonin-affecting antidepressant use in relation to platelet reactivity

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Abstract

Depression is an independent risk factor of cardiovascular disease morbidity. Serotonin is a key neurotransmitter in depressive pathology, contained within platelets, and is a weak activator of platelets. Our study assessed the link between platelet reactivity traits, depression, and antidepressant (AD)-use in a large population sample. Our study was conducted in the Framingham Heart Study (n= 3,140), and AD-use (n=563) and aspirin-use (n=681) were noted. Depression was measured using the Center for Epidemiological Studies-Depression (CES-D) survey. Platelet reactivity traits were measured across multiple agonists using five distinct assays. We utilized a linear mixed effects model to test associations between platelet traits and depression, adjusting for age, sex, aspirin use, and AD-use. Similarly, we analyzed trait associations with any AD-use, serotonin-affecting ADs, and norepinephrine-affecting ADs, respectively. There were strong associations with reduced platelet function and AD-use, particularly with serotonin-affecting medications. This included lower Optimul epinephrine maximal aggregation(P=4.87E-13), U46619 ec50 (P=9.09E-11), lower LTA ADP final aggregation (P=1.03E-05), and higher LTA ADP disaggregation (P=2.28E-05). We found similar associations with serotonin-affecting ADs in an aspirin-taking subset of our sample. There were no significant associations between platelet traits and depression. In the largest study yet of AD-use and platelet function we show that antidepressants, particularly serotonin-affecting ADs, inhibit platelets. We did not find evidence that depressive symptomatology in the absence of medication is associated with altered platelet function. Our results are consistent with AD-use leading to platelet serotonin depletions, decreased stability of platelet aggregates, and overall decreased aggregation to multiple agonists, which may be a mechanism by which ADs increase risk of bleeding and decrease risk of thrombosis

Disponible en: https://doi.org/10.1002/cpt.2517

REVISTAS DE MEDICINA GENERAL

New England Journal of Medicine

Ticagrelor versus Clopidogrel in CYP2C19 Loss-of-Function Carriers with Stroke or TIA

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Abstract

BACKGROUND

Comparisons between ticagrelor and clopidogrel for the secondary prevention of stroke in CYP2C19 loss-of-function carriers have not been extensively performed.

METHODS

We conducted a randomized, double-blind, placebo-controlled trial at 202 centers in China involving patients with a minor ischemic stroke or transient ischemic attack (TIA) who carried CYP2C19 loss-of-function alleles. Patients were assigned within 24 hours after symptom onset, in a 1:1 ratio, to receive ticagrelor (180 mg on day 1 followed by 90 mg twice daily on days 2 through 90) and placebo clopidogrel or to receive clopidogrel (300 mg on day 1 followed by 75 mg once daily on days 2 through 90) and placebo ticagrelor; both groups received aspirin for 21 days. The primary efficacy outcome was new stroke, and the primary safety outcome was severe or moderate bleeding, both within 90 days.

RESULTS

A total of 11,255 patients were screened and 6412 patients were enrolled, with 3205 assigned to the ticagrelor group and 3207 to the clopidogrel group. The median age of the patients was 64.8 years, and 33.8% were women; 98.0% belonged to the Han Chinese ethnic group. Stroke occurred within 90 days in 191 patients (6.0%) in the ticagrelor group and 243 patients (7.6%) in the clopidogrel group (hazard ratio, 0.77; 95% confidence interval, 0.64 to 0.94; P=0.008). Secondary outcomes were generally in the same direction as the primary outcome. Severe or moderate bleeding occurred in 9 patients (0.3%) in the ticagrelor group and in 11 patients (0.3%) in the clopidogrel group; any bleeding occurred in 170 patients (5.3%) and 80 patients (2.5%), respectively.

CONCLUSIONS

Among Chinese patients with minor ischemic stroke or TIA who were carriers of CYP2C19 loss-of-function alleles, the risk of stroke at 90 days was modestly lower with ticagrelor than with clopidogrel. The risk of severe or moderate bleeding did not differ between the two treatment groups, but ticagrelor was associated with more total bleeding events than clopidogrel.

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JAMDA: Journal of the American Medical Directors Association

Effectiveness and Tolerance of Renin-Angiotensin System Inhibitors With Aging in Chronic Kidney Disease

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Abstract

Objectives

Renin-angiotensin system inhibitors (RASi) are recommended for slowing chronic kidney disease (CKD) progression to kidney failure. Their effectiveness and tolerance as patients age remain uncertain because older patients have often been excluded from clinical trials.

Design

CKD-REIN cohort study.

Setting and Participants

We studied 2762 patients with CKD stages 3 and 4 and a clinical indication for RASi enrolled between 2013 and 2016 in 40 nephrology clinics nationally representative in France.

Methods

The primary outcome was the occurrence of kidney failure or death. The secondary outcomes were the occurrence of cardiovascular events and hospitalizations with acute kidney injury (AKI) or hyperkalemia. A propensity score analysis was performed. We used Cox models to estimate hazard ratios (HRs) for each outcome associated with RASi prescription and tested interactions with age.

Results

Patients' mean age was 67 years, including 841 (30%) aged 75 years and older; 2178 (79%) were prescribed RASi's. During a median follow-up of 4.6 years, 33% of patients reached kidney failure or died. RASi prescription was associated with a lower risk of kidney failure or death (HR 0.79, 95% CI 0.66, 0.95), an association not modified by age (*P* for interaction = .72). It was not significantly associated with cardiovascular events. During the first 3 years of follow-up, 14% of patients were hospitalized with AKI or hyperkalemia, but risk was not higher among those prescribed RASi's (HR 0.75, 95% CI 0.55-1.02) and age did not modify its effect (*P* for interaction = .28).

Conclusions and Implications

This study shows that aging does not appear to modify either RASi's beneficial effects on major CKD outcomes or their potential adverse effects

DIsponible en: https://doi.org/10.1016/j.jamda.2021.10.019