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Selección de artículos

REVISTAS GERIÁTRICAS

GERIATRICS AND GERONOTOLOGY INTERNATIONAL

Machine-learning classifier models for predicting sarcopenia in the elderly based on physical factors

Jun-hee Kim

Abstract

Aim

As the size of the elderly population gradually increases, musculoskeletal disorders, such as sarcopenia, are increasing. Diagnostic techniques such as X-rays, computed tomography, and magnetic resonance imaging are used to predict and diagnose sarcopenia, and methods using machine learning are gradually increasing. This study aimed to create a model that can predict sarcopenia using physical characteristics and activity-related variables without medical diagnostic equipment, such as imaging equipment, for the elderly aged 60 years or older.

Methods

A sarcopenia prediction model was constructed using public data obtained from the Korea National Health and Nutrition Examination Survey. Models were built using Logistic Regression, Support Vector Machine (SVM), XGBoost, LightGBM, RandomForest, and Multi-layer Perceptron Neural Network (MLP) algorithms, and the feature importance of the models trained with the algorithms, except for SVM and MLP, was analyzed.

Results

The sarcopenia prediction model built with the LightGBM algorithm achieved the highest test accuracy, of 0.848. In constructing the LightGBM model, physical characteristic variables such as body mass index, weight, and waist circumference showed high importance, and activity-related variables were also used in constructing the model.

Conclusions

The sarcopenia prediction model, which consisted of only physical characteristics and activity-related factors, showed excellent performance. This model has the potential to assist in the early detection of sarcopenia in the elderly, especially in communities with limited access to medical resources or facilities.

Conclusions

Our findings suggest that health education + centralised reminder + onsite vaccination may potentially be an effective strategy regardless of cost, but the evidence level was low. More rigorous trials are needed to identify the association between strategies and vaccination rates among older adults and to integrate such evidence into clinical care to improve vaccination rates.

Disponible en: https://doi.org/10.1111/ggi.14895

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Disponible en: https://doi.org/10.1111/ggi.14895

Association between postoperative hyperactive delirium and major complications in elderly patients undergoing emergency hip fracture surgery: A large-scale cohort study

Mingyang Sun, Wan-Ming Chen, Szu-Yuan Wu, Jiaqiang Zhang

Aim

This cohort study aimed to explore the connection between postoperative hyperactive delirium and major complications in elderly patients undergoing emergency hip fracture surgery.

Methods

Elderly patients aged 65 years and older undergoing emergency hip fracture surgery were included in the study. The presence of postoperative hyperactive delirium was assessed, and logistic regression analysis, following propensity score matching, was conducted to investigate the association between postoperative hyperactive delirium and major complications occurring 30 and 90 days post-surgery. The analysis controlled for potential confounding factors.

Results

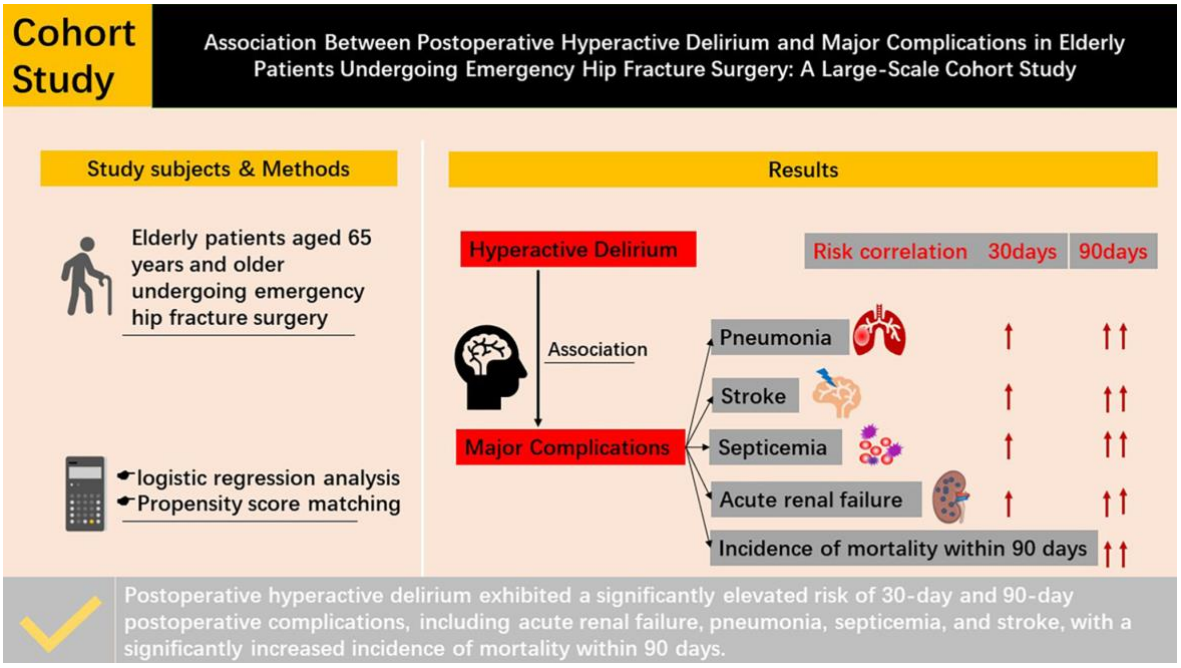
After propensity score matching, the analysis included 13 590 patients, equally distributed with 6795 in each group. The group experiencing postoperative hyperactive delirium exhibited a significantly elevated risk of 30-day postoperative complications, including acute renal failure, pneumonia, septicemia, and stroke, with adjusted odds ratios ranging from 1.64 to 2.39. Furthermore, this group displayed notably higher rates of 90-day postoperative complications, encompassing mortality, acute renal failure, pneumonia, septicemia, and stroke, with a significantly increased incidence of mortality within 90 days.

Conclusion

Postoperative hyperactive delirium in elderly patients undergoing emergency hip fracture surgery is significantly linked to an increased risk of major complications at both 30 and 90 days post-surgery. These findings underscore the critical importance of delirium

prevention and management in this patient population, offering the potential to reduce the occurrence of postoperative complications.

Disponible en: https://doi.org/10.1111/ggi.14894



BMC Geriatrics

Combined systematic screening for malnutrition and dysphagia in hospitalized older adults: a scoping review

Susanne M. Javorszky, Christoph Palli, Susanne Domkar and Bernhard Iglseder

Abstract

Background

Dysphagia affects about 40% of patients admitted to acute geriatric wards, as it is closely associated with diseases that rise in prevalence with advancing age, such as stroke, Parkinson's disease, and dementia. Malnutrition is a highly associated predictive factor of dysphagia as well as one of the most common symptoms caused by dysphagia. Thus, the two conditions may exist simultaneously but also influence each other negatively and quickly cause functional decline especially in older adults. The purpose of this review was to determine whether institutions have established a protocol combining screenings for dysphagia and malnutrition on a global scale. If combined screening protocols have been implemented, the respective derived measures will be reported.

Methods

A scoping review was conducted. A systematic database search was carried out in January and February 2024. Studies were included that examined adult hospitalized patients who

were systematically screened for dysphagia and malnutrition. The results were managed through the review software tool Covidence. The screening of titles and abstracts was handled independently by two reviewers; conflicts were discussed and resolved by consensus between three authors. This procedure was retained for full-text analysis and extraction. The extraction template was piloted and revised following feedback prior to extraction, which was carried out in February 2024.

Results

A total of 2014 studies were found, 1075 of which were included for abstract screening, 80 for full text screening. In the end, 27 studies were extracted and reported following the reporting guideline PRISMA with the extension for Scoping Reviews.

Conclusion

Most of the studies considered the prevalence and association of dysphagia and malnutrition with varying outcomes such as nutritional status, pneumonia, oral nutrition, and swallowing function. Only two studies had implemented multi-professional nutrition teams.

Disponible en: https://doi.org/10.1186/s12877-024-05070-6

Strategies aiming to improve statin therapy adherence in older adults: a systematic review

Philipp Frieden, Rose Gagnon, Élodie Bénard, Benoît Cossette, Frédéric Bergeron, Denis Talbot and Jason Robert Guertin

Abstract

Background

Randomized clinical trials have shown that, under optimal conditions, statins reduce the risk of cardiovascular events in older adults. Given the prevalence and consequences of suboptimal adherence to statin among older adults, it is essential to document strategies designed to increase statin adherence in this population. The objective of this systematic review is to describe and summarize the effectiveness of interventions to improve statin adherence in older adults (≥ 65 years old).

Methods

This review followed PRISMA guidelines. Studies were identified from PubMed, PsycINFO, Embase, CINAHL and Web of Science. Study selection was conducted independently by four reviewers working in pairs. Included studies reported data on interventions designed to increase adherence to statin therapy in older adults and were original trials or observational studies. Interventions were pragmatically regrouped into 8 different categories going from patient to administrative level. Two reviewers extracted study data and assessed study quality independently. Given the heterogeneity between the included studies, a narrative critique and summary was conducted.

Results

Twelve out of the 2889 identified articles were included in the review. Our review showed that simplifying patients' drug regimen, administrative improvements and large-scale pharmacy-led automated telephone interventions show positive effects on patient adherence to statin therapy, with odds ratios between > 1.0 and 3.0, while education-based strategies and intensified patient care showed mixed results.

Conclusions

Current evidence suggests that some interventions can increase statin adherence in older adults, which could help in the reduction of the risk of a cardiovascular event in this population.

Disponible en: https://doi.org/10.1186/s12877-024-05031-z

Association between pain interference and motoric cognitive risk syndrome in older adults: a population-based cohort study

Gege Li, Zijun He, Jinjing Hu, Chongwu Xiao, Weichao Fan, Zhuodong Zhang, Qiuru Yao, Jihua Zou, Guozhi Huang and Qing Zeng

Abstract

Objectives

Motoric cognitive risk syndrome (MCR) is a pre-dementia condition characterized by subjective complaints in cognition and slow gait. Pain interference has previously been linked with cognitive deterioration; however, its specific relationship with MCR remains unclear. We aimed to examine how pain interference is associated with concurrent and incident MCR.

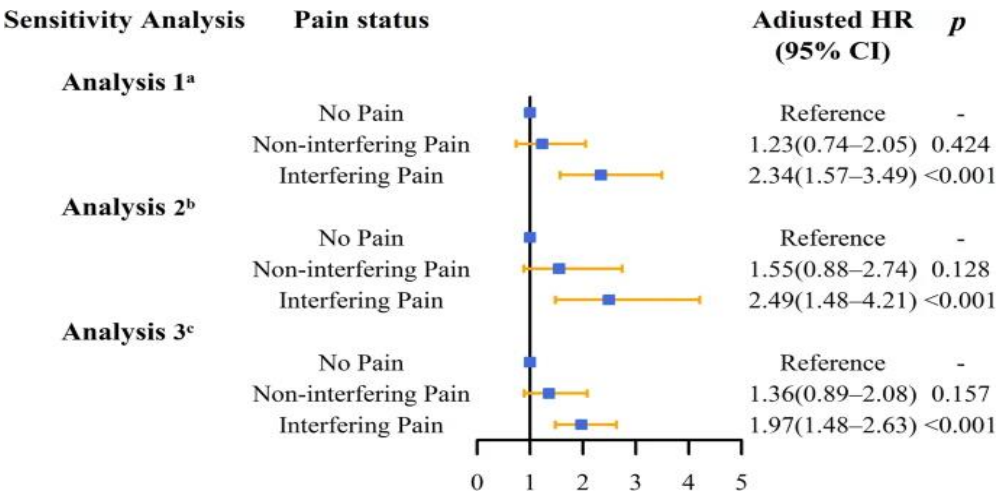
Methods

This study included older adults aged ≥ 65 years without dementia from the Health and Retirement Study. We combined participants with MCR information in 2006 and 2008 as baseline, and the participants were followed up 4 and 8 years later. The states of pain interference were divided into 3 categories: interfering pain, non-interfering pain, and no pain. Logistic regression analysis was done at baseline to examine the associations between pain interference and concurrent MCR. During the 8-year follow-up, Cox regression analysis was done to investigate the associations between pain interference and incident MCR.

Results

The study included 7120 older adults (74.6 ± 6.7 years; 56.8% females) at baseline. The baseline prevalence of MCR was 5.7%. Individuals with interfering pain had a significantly increased risk of MCR (OR = 1.51, 95% CI = 1.17–1.95; p = 0.001). The longitudinal analysis

included 4605 participants, and there were 284 (6.2%) MCR cases on follow-up. Participants with interfering pain at baseline had a higher risk for MCR at 8 years of follow-up (HR = 2.02, 95% CI = 1.52–2.69; p < 0.001).



Conclusions

Older adults with interfering pain had a higher risk for MCR versus those with non-interfering pain or without pain. Timely and adequate management of interfering pain may contribute to the prevention and treatment of MCR and its associated adverse outcomes.

Disponible en: https://doi.org/10.1186/s12877-024-04974-7

Drugs and Aging

Respiratory Syncytial Virus Infection in Older Adults: An Update

Rebecca O'Dwyer, Sean Stern, Clarence T. Wade, Anuradha Guggilam & William E. Rosenfeld

Abstract

Introducción

El virus sincitial respiratorio (VSR) es una causa significativa de infecciones respiratorias en adultos mayores, especialmente aquellos con comorbilidades o sistemas inmunitarios debilitados. El VSR puede llevar a hospitalizaciones y complicaciones graves, por lo que es crucial actualizar y comprender las características epidemiológicas, clínicas y de manejo de esta infección en este grupo de población.

Material y Métodos

Se realizó una revisión exhaustiva de la literatura científica disponible hasta la fecha sobre infecciones por VSR en adultos mayores. Las fuentes incluyeron estudios clínicos, informes de casos y datos de vigilancia epidemiológica. Se analizaron artículos que proporcionaban información sobre la incidencia, factores de riesgo, manifestaciones clínicas, métodos de diagnóstico, tratamientos y estrategias de prevención del VSR en adultos mayores.

Resultados

La incidencia del VSR en adultos mayores está subestimada debido a la falta de pruebas diagnósticas rutinarias y la similitud de los síntomas con otras infecciones respiratorias. Según los datos disponibles, se estima que el VSR causa entre 177,000 y 380,000 hospitalizaciones anuales en adultos mayores de 65 años en Estados Unidos, con una tasa de mortalidad hospitalaria de aproximadamente el 5-10%. Los factores de riesgo identificados incluyen la edad avanzada, enfermedades cardíacas y pulmonares crónicas, y condiciones inmunosupresoras. Clínicamente, el VSR puede presentar desde síntomas leves de resfriado hasta enfermedades respiratorias graves como bronquiolitis y neumonía.

Las pruebas de diagnóstico rápido y las técnicas moleculares han mejorado la detección del VSR. En estudios recientes, la sensibilidad de estas pruebas ha sido reportada entre el 80-90%. Sin embargo, actualmente no existe un tratamiento antiviral específico ampliamente disponible, y el manejo se centra en el soporte sintomático. Las medidas preventivas, como la inmunización pasiva y las prácticas de higiene, son esenciales para reducir la transmisión. La inmunización pasiva con palivizumab ha mostrado una reducción significativa en las tasas de hospitalización por VSR en poblaciones de alto riesgo.

Conclusiones

El VSR es una amenaza significativa para la salud de los adultos mayores, con una carga subestimada debido a desafíos diagnósticos y clínicos. Es vital mejorar la vigilancia y el diagnóstico para implementar estrategias de manejo efectivas y desarrollar vacunas y tratamientos antivirales específicos. La prevención, a través de medidas higiénicas y potenciales futuras vacunas, será clave para reducir el impacto del VSR en esta población vulnerable.

Disponible en: https://doi.org/10.1007/s40266-024-01118-9

Associations Between Midlife Anticholinergic Medication Use and Subsequent Cognitive Decline: A British Birth Cohort Study

Mark J. Rawle, Wallis C. Y. Lau, Arturo Gonzalez-Izquierdo, Praveetha Patalay, Marcus Richards & Daniel Davis

Abstract

Background

Anticholinergic medication use is associated with cognitive decline and incident dementia. Our study, a prospective birth cohort analysis, aimed to determine if repeated exposure to anticholinergic medications was associated with greater decline, and whether decline was reversed with medication reduction.

Methods

From the Medical Research Council (MRC) National Survey of Health and Development, a British birth cohort with all participants born in a single week of March 1946, we quantified anticholinergic exposure between ages 53 and 69 years using the Anticholinergic Cognitive Burden Scale (ACBS). We used multinomial regression to estimate associations with global cognition, quantified by the Addenbrooke's Cognitive Examination, 3rd Edition (ACE-III). Longitudinal associations between ACBS and cognitive test results (Verbal memory quantified by the Word Learning Test [WLT], and processing speed quantified by the Timed Letter Search Task [TLST]) at three time points (age 53, 60–64 and 69) were assessed using mixed and fixed effects linear regression models. Analyses were adjusted for sex, childhood cognition, education, chronic disease count and severity, and mental health symptoms.

Results

Anticholinergic exposure was associated cross-sectionally with lower ACE-III scores at age 69, with the greatest effects in those with high exposure at ages 60–64 (mean difference − 2.34, 95% confidence interval [CI] − 3.51 to − 1.17). Longitudinally, both mild-moderate and high ACBS scores were linked to lower WLT scores, again with high exposure showing larger effects (mean difference with contemporaneous exposure − 0.90, 95% CI − 1.63 to − 0.17; mean difference with lagged exposure − 1.53, 95% CI − 2.43 to − 0.64). Associations remained in fixed effects models (mean difference with contemporaneous exposure −1.78, 95% CI −2.85 to − 0.71; mean difference with lagged exposure − 2.23, 95% CI − 3.33 to − 1.13). Associations with TLST were noted only in isolated contemporaneous exposure (mean difference − 13.14, 95% CI − 19.04 to − 7.23; $p < 0.01$).

Conclusions

Anticholinergic exposure throughout mid and later life was associated with lower cognitive function. Reduced processing speed was associated only with contemporaneous anticholinergic medication use, and not historical use. Associations with lower verbal recall were evident with both historical and contemporaneous use of anticholinergic medication, and associations with historical use persisted in individuals even when their anticholinergic medication use decreased over the course of the study.

Disponible en: https://doi.org/10.1007/s40266-024-01116-x

European Geriatric Medicine

The relationship between dehydration and etiologic subtypes of major neurocognitive disorder in older patients

Damla Aslan Kirazoglu, Cihan Heybeli, Kübra Atcıyurt, Veliye Yigitalp, Lee Smith, Nicola Veronese, Masoud Rahmati & Pinar Soysal

Abstract

Aim

Studies investigating associations between etiologic subtypes of major neurocognitive disorder (MND) and dehydration frequency are lacking. The aim of this study was to investigate the prevalence and risk factors of dehydration among older adults with and without MND (dementia), and across different etiologic subtypes of MND.

Methods

This cross-sectional study included adults aged ≥ 65 years old from one geriatric outpatient clinic. Dehydration was defined as a calculated [1,86 × (Na + K) + 1,15 × glucose + urea + 14] plasma osmolarity of > 295 mOsm/L.Clinical characteristics and measures of comprehensive geriatric assessments of patients with dehydration and normohydration were compared. MND was diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders—Fifth Edition criteria. The underlying etiologic subtypes were determined by specific diagnostic criteria.

Results

Of the 1377 patients 72% were female, the mean age was 80 ± 8 years, and 575 had dementia. Dehydration was more common in patients with dementia than those without dementia (58% vs. 53%, p = 0.044). The prevelance of dehydration was 57%, 62%, 54%, 57% and 68% in Alzheimer's disease, Parkinson's disease dementia, fronto-temporal dementia, dementia with Lewy bodies, and vascular dementia, respectively (p ≥ 0.05). MND was associated with dehydration (OR 1.26, 95% CI 1.01–1.57; p = 0.037) after adjustment for age and sex. In multivariable analysis, among patients with dementia, hypertension, DM, CKD, and dysphagia were more common while mean Mini-Mental State Examination score was lower in those who had dehydration versus no dehydration in older patients with dementia (p < 0.05).

Conclusion

Dehydration is slightly associated with the presence of MND independent of age and sex. However, dehydration is also quite common in older patients without cognitive disorders. Therefore, hydration status should be monitored in older adults irrespective of

neurocognitive status. Hypertension, DM, CKD, dysphagia and severity of cognitive dysfunction were associated with dehydration in patients with dementia. The prevalence of dehydration is highest in patients with vascular dementia.

Disponible en: https://doi.org/10.1007/s41999-024-00986-z

Invasive meningococcal disease in older adults: current perspectives and call for action

Catherine Weil-Olivier, Muhamed-Kheir Taha, Sean Leng, Ener Cagri Dinleyici, Paolo Bonanni, Elena Moya, Andreas Leischker & Saber Yezli

Abstract

Purpose

Invasive meningococcal disease (IMD) is a devastating condition. While most attention is directed towards disease in children and adolescents, IMD poses an important cause of morbidity and mortality in adults ≥60 years. While immunization is a critical component of healthy ageing strategies, meningococcal immunization is not routinely offered to older adults. The aim of this review was to summarize clinical and epidemiological aspects of IMD and available immunization strategies, with a particular focus on disease in older individuals, to emphasize the importance of this rather neglected area.

Methods

An expert working group was established to evaluate clinical and epidemiological data to raise awareness of IMD in older individuals, and develop suggestions to improve the existing burden.

Results

Routine child and adolescent meningococcal immunization has substantially reduced IMD in these targeted populations. Consequently, prevalence and proportion of IMD among those ≥60 years, mostly unvaccinated, is increasing in developed countries (accounting for up to 25% of cases). IMD-related mortality is highest in this age-group, with substantial sequelae in survivors. IMD due to serogroups W and Y is more prevalent among older adults, often with atypical clinical features (pneumonia, gastrointestinal presentations) which may delay timely treatment.

Conclusions

IMD in older adults remains overlooked and greater awareness is required at clinical and societal levels. We encourage clinicians and immunization policy makers to reconsider IMD,

with a call for action to remedy existing inequity in older adult access to protective meningococcal immunization.

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Journal of the American Geriatrics Society

Deprescribing for people living with dementia: ALIGNing interventions and outcomes

Aimee N. Pickering MD, MS, Timothy S. Anderson MD, MAS

Abstract

Introducción

La polifarmacia afecta al 75% de las personas que viven con demencia (PLWD) en la comunidad. La deprescripción ha sido promovida como un marco para reducir el uso de medicamentos cuyos daños superan sus beneficios. Sin embargo, existen varios obstáculos para una deprescripción exitosa en PLWD en la atención primaria, como la falta de tiempo de los clínicos, la carencia de guías sobre el manejo de medicamentos en esta población, la dificultad para evaluar los efectos de los medicamentos y los valores del paciente, y la percepción de los clínicos sobre la reticencia de los pacientes y cuidadores a deprescribir medicamentos. Utilizar farmacéuticos y otros miembros del equipo de salud para evaluar las prioridades del paciente y hacer recomendaciones de deprescripción puede ayudar a superar algunas de estas barreras. En este número del Journal of the American Geriatrics Society, Green y colegas describen un ensayo piloto de una intervención pragmática, dirigida por farmacéuticos, a través de telemedicina para PLWD y sus cuidadores en atención primaria.

Material y Métodos

Se realizó un ensayo piloto aleatorizado de una intervención liderada por farmacéuticos, titulada ALIGN: Alineando Medicamentos con lo que Más Importa, con el objetivo de optimizar la prescripción y reducir la complejidad de los medicamentos de manera acorde a los objetivos del paciente y cuidador. La intervención consistió en un folleto educativo para pacientes y cuidadores; una o más visitas por telemedicina con un farmacéutico geriátrico enfocado en revisar los riesgos y beneficios de los medicamentos en el contexto de las preferencias del paciente y cuidador; y recomendaciones de manejo de medicamentos por parte del farmacéutico al proveedor de atención primaria (PCP). Los sujetos asignados al grupo de control recibieron la intervención después de un retraso de 3 meses. Los resultados de viabilidad incluyeron la inscripción, finalización, tiempo del farmacéutico y aceptación de las recomendaciones por parte del PCP.

Resultados

El estudio inscribió a 69 parejas de pacientes y cuidadores, de los cuales el 80% completó el estudio. Los resultados demuestran que la deprescripción en atención primaria es intensiva en tiempo, con el 62% de los participantes requiriendo múltiples visitas de seguimiento con el farmacéutico, y bien recibida por los PCPs, quienes estuvieron de acuerdo con el 98% de las recomendaciones. Los farmacéuticos hicieron un promedio de cinco recomendaciones por sujeto, que incluían deprescripción, ajuste de medicamentos a un régimen menos oneroso y adición de medicamentos. El brazo de intervención tuvo más medicamentos descontinuados y más medicamentos agregados, resultando en una reducción modesta pero no clínicamente significativa en la complejidad del régimen de medicamentos, pero no en el recuento total de medicamentos.

Conclusiones

Este estudio agrega a la creciente literatura sobre intervenciones de deprescripción dirigidas por farmacéuticos en atención primaria, siendo uno de los primeros en enfocarse en la población vulnerable de PLWD e incorporando directamente las perspectivas de los cuidadores. El estudio demuestra que las intervenciones de deprescripción en atención primaria son factibles para muchos PLWD, pero estas intervenciones son intensivas en recursos. A pesar de aprovechar a farmacéuticos entrenados en geriatría ya integrados en las clínicas con programas de manejo de medicamentos existentes, la mayoría de las visitas tomaron más de 20 minutos y la mayoría de los pacientes requirieron múltiples visitas de seguimiento. Los ensayos posteriores deben considerar tanto los resultados de efectividad como de implementación, particularmente para las clínicas sin infraestructura preexistente de farmacéuticos.

Disponible en: https://doi.org/10.1111/jgs.18946

Cognitive impairment and treatment strategy for atrial fibrillation in older adults: The SAGE-AF study

Deepti S. Athreya, Jane S. Saczynski PhD, Jerry H. Gurwitz MD, Kevin M. Monahan MD, Benita A. Bamgbade PharmD, Tenes J. Paul DO, Felix Sogade MD, Darleen M. Lessard MS, David D. McManus MD, Robert H. Helm MD

Abstract

Background

Cognitive impairment is strongly associated with atrial fibrillation (AF). Rate and rhythm control are the two treatment strategies for AF and the effect of treatment strategy on risk of cognitive decline and frailty is not well established. We sought to determine how treatment strategy affects geriatric-centered outcomes.

Methods

The Systematic Assessment of Geriatric Elements-AF (SAGE-AF) was a prospective, observational, cohort study. Older adults with AF were prospectively enrolled between

2016 and 2018 and followed longitudinally for 2 years. In a non-randomized fashion, participants were grouped by rate or rhythm control treatment strategy based on clinical treatment at enrollment. Baseline characteristics were compared. Longitudinal binary mixed models were used to compare treatment strategy with respect to change in cognitive function and frailty status. Cognitive function and frailty status were assessed with the Montreal Cognitive Assessment Battery and Fried frailty phenotype tools.

Results

972 participants (mean age = 75, SD = 6.8; 49% female, 87% non-Hispanic white) completed baseline examination and 2-year follow-up. 408 (42%) were treated with rate control and 564 (58%) with rhythm control. The patient characteristics of the two groups were different at baseline. Participants in the rate control group were older, more likely to have persistent AF, prior stroke, be treated with warfarin and have baseline cognitive impairment. After adjusting for baseline differences, participants treated with rate control were 1.5 times more likely to be cognitively impaired over 2 years (adjusted OR: 1.47, 95% CI:1.12, 1.98) and had a greater decline in cognitive function (adjusted estimate: −0.59 (0.23), $p < 0.01$) in comparison to rhythm control. Frailty did not vary between the treatment strategies.

Conclusions

Among those who had 2-year follow-up in non-randomized observational cohort, the decision to rate control AF in older adults was associated with increased odds of decline in cognitive function but not frailty.

Disponible en: https://doi.org/10.1111/jgs.18949

Assessing the prevalence of Beers medication utilization in the Medicare Part D population in 2020

Eric P. Borrelli PhD, PharmD, MBA

Abstract

Background

Medication utilization has been increasing in the U.S. year-over-year for several decades. As older adults take more medications, there is a higher risk of them being exposed to drug–drug or drug-disease interactions. The American Geriatrics Society in 2019 updated their Beers Criteria for Potentially Inappropriate Medication (PIM) Use in Older Adults. The objective of this study was to assess the prevalence of utilization of medications included in the 2019 Beers Criteria.

Methods

An analysis was conducted using the Medicare Part D Provider Utilization and Payment Data Public Use File for calendar-year 2020. Medications identified in the 2019 Beers Criteria were applied to the analysis. Two categories of medications were assessed: (1) “Avoid” and (2) “Use With Caution.”

Results

In 2020, 56 million prescriptions were dispensed to Medicare patients 65 years and older that are recommended to be avoided without exception (4.7% of all prescriptions) totaling $957 million in medication costs. The most utilized medication classes in this category were benzodiazepines (25,949,994 prescriptions), "Z-drugs" (6,204,909 prescriptions), long-acting sulfonylureas (5,306,577 prescriptions), 1st-generation antihistamines (5,049,289 prescriptions), and tricyclic antidepressants (4,190,062 prescriptions). Additionally, 135 million prescriptions were dispensed to Medicare beneficiaries 65 years and older for medications which the Beers Criteria states to use caution (11.3% of all prescriptions) exceeding $2.85 billion in medication costs. The most utilized medications for this category were diuretics (74,599,126 prescriptions), selective serotonin reuptake inhibitors (30,033,121 prescriptions), serotonin and norepinephrine reuptake inhibitors (11,858,968 prescriptions), tramadol (11,450,878 prescriptions), and mirtazapine (5,737,304 prescriptions).

Conclusion

Even with the existence of the AGS Beers Criteria for PIM Use in Older Adults and its continued updated versions, 16% of medications dispensed to Medicare Part D were potentially inappropriate. Future studies are needed to assess if this has led to worsened outcomes among older adults who utilized these PIM

Disponible en: https://doi.org/10.1111/jgs.18943

Revista Española de Geriatría y Gerontología

Traumatismo craneoencefálico en pacientes mayores de 65 años atendidos en urgencias; características y complicaciones

Josep Guil Sànchez

Abstract

Antecedentes y objetivo

El envejecimiento se asocia a un mayor riesgo de caídas y traumatismos. El objetivo del estudio fue valorar las características de los pacientes mayores de 65 años que consultaron en urgencias por traumatismo craneoencefálico (TCE) en 2022, su relación con el deterioro cognitivo, la dependencia funcional, el uso de antiagregantes/anticoagulantes orales y las complicaciones presentadas.

Materiales y métodos

Estudio retrospectivo realizado del 1 de enero al 31 de diciembre de 2022. Se recogieron datos demográficos: edad, sexo, procedencia; factores de riesgo cardiovascular; deterioro cognitivo mediante cuestionario de Pfeiffer; discapacidad física según el índice de Barthel;

número de fármacos; uso de antiagregante y anticoagulante oral (ACO); mecanismo de caída; realización de radiografía/TAC craneal y presencia de complicaciones: hemorragia intracraneal (HIC) y muerte.

Resultados

Se incluyeron 599 pacientes. La edad media fue 82,3±8,2 años. El 63,8% fueron mujeres y el 36,2% hombres. El 75,3% procedían de su domicilio y el 24,7% de residencia. No presentaban demencia el 61,4% y demencia moderada-grave el 38,6%. El 58,1% eran independientes funcionalmente y el 25,1% presentaban dependencia moderada-severa. Tenían FRCV el 85,7%: HTA 476 (79,5%), dislipidemia 354(59,1%), DM 217(36,2%), obesidad 173 (28,9%) y tabaquismo 15 (2,5%). El número de fármacos/paciente fue 9,2±4,3. El 94,7% presentaba polifarmacia. El 35,9% tomaba antiagregante y 30,2% anticoagulante. Presentaron hemorragia intracraneal 11 (2,3%) pacientes. Fallecieron 4 (0,7%) pacientes.

Conclusiones

El TCE en nuestro estudio se produjo por un traumatismo de baja energía en una paciente de sexo femenino, sin demencia, independiente funcionalmente y con polifarmacia. Se presentaron pocas complicaciones graves: 2,3% HIC y 0,7% defunciones. El 90,1% de las HIC ocurrieron en pacientes en tratamiento con antiagregante y/o ACO.

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Journal of Geriatric Oncology

The rates of septicemia in older adults with prostate cancer treated with abiraterone or enzalutamide: A population-based study

Nikita Nikita,Krupa Gandhi,Scott W. Keith,Swapnil Sharma,Wm Kevin Kelly,Grace Lu-Yao

Abstract

Introduction

Prostate cancer (PCa) is the most common non-cutaneous tumor among American men. Androgen receptor signaling inhibitors such as abiraterone and enzalutamide have been approved for similar disease states among patients with advanced PCa. Existing data suggest using steroids is associated with an increased risk of infection. Because abiraterone is usually prescribed with prednisone, we sought to compare the risk of septicemia in patients using abiraterone vs. enzalutamide.

Materials and Methods

We utilized the SEER-Medicare-linked data and used negative binomial regression models to compare the changes in the rates of septicemia-related hospitalizations six months pre- and post-abiraterone and enzalutamide initiation.

Results

We found that the incidence of septicemia-related hospitalizations increased 2.77 fold within six months of initiating abiraterone (incidence rate ratio [IRR]: 2.77, 95% confidence interval [CI]: 2.17–3.53) 1.97 fold within six months of starting enzalutamide (IRR: 1.97, 95% CI: 1.43–2.72). However, the difference in the changes did not reach statistical significance (interaction IRR: 0.71, 95% CI: 0.48–1.06).

Discussion

The findings suggest that both abiraterone and enzalutamide are associated with an increased risk of septicemia-related hospitalizations. However, the difference in the increase of septicemia risk following the two treatments did not reach statistical significance. Further studies are warranted to understand the mechanisms at play.

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Emergency presentation of colorectal cancer in older adults: A retrospective cohort analysis

Jennifer H. Nobes, Mark A. Baxter, Craig Mowat

Abstract

Introduction

Adults aged 70 years and over account for almost 60% of colorectal cancer (CRC) diagnoses in the United Kingdom. Whilst emergency presentation of CRC is known to be associated with poorer outcomes across all ages, older adults are less likely to be treated with curative intent and have poorer overall survival (OS). We aimed to investigate whether presentation, management, or outcome differed in older (≥70 years) versus younger (<70 years) adults in our population.

Materials and Methods

The electronic records of patients diagnosed with CRC within the period 2016 to 2019 in National Health Service (NHS) Tayside, Scotland were retrospectively analysed. Patients were grouped by age (<70 years and ≥70 years). Demographics were compared by Chi-squared or t-test, and Kaplan-Meier and Cox proportional hazard regression were used for survival analyses.

Results

In total, 1245 patients were diagnosed with CRC (median age 71 years, range 20–98). Of these, 215 patients (17.3%) presented emergently and were included in the analysis. Older adults accounted for 65.1% (n = 140) of emergency presentations. Older adults were less

likely to present with classical symptoms of CRC (80.0% vs 90.7%, p = 0.04) and more likely to present via the medical assessment unit (46.4% vs 30.7%, p = 0.03). Additionally, older adults were less likely to receive a histological diagnosis of CRC (71.4% vs 97.3%, p < 0.001) or have complete staging investigations performed (78.6% vs 96.0%, p < 0.001). Fewer older adults underwent surgical management (55.0% vs 86.7%, p < 0.001) and fewer were treated with chemotherapy (14.3% vs 69.3%, p < 0.001). Whilst older adults had poorer median OS than those aged <70 years (12.0 vs 34.4 months, p < 0.001), multivariate Cox proportional hazards regression demonstrated that higher stage (stage III hazard ratio [HR] 2.7, 95% confidence interval [CI] 1.6–4.7, stage IV HR 16.7, 95% CI 9.7–28.8, incomplete HR 8.2, 95% CI 4.6–14.7) and not receiving chemotherapy (HR 2.6, 95% CI 1.7–4.0) were associated with poorer survival, whereas age and sex were not.

Discussion

Emergency presentation of colorectal cancer was more common in older adults. Older adults were more likely to present atypically, less likely to have completed staging, and had lower rates of intervention, which were associated with poorer survival outcome.

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REVISTAS FARMACÉUTICAS

European Journal of Clinical Pharmacy

A review of an investigational drug retatrutide, a novel triple agonist agent for the treatment of obesity

Manmeet Kaur & Saurav Misra

Abstract

Background

Obesity is one of the critical public health problems in our society. It leads to various health conditions, such as type 2 diabetes mellitus, cardiovascular disease, hypertension, dyslipidaemia, and non-alcoholic fatty liver disease. With the rising incidence of obesity, there is a growing demand for new therapies which can effectively manage body weight and improve health.

Current evidence

Currently under development, multi-receptor agonist drugs may offer a promising solution to meet this unmet medical need. Retatrutide is a novel triple receptor agonist peptide that targets the glucagon receptor (GCGR), glucose-dependent insulinotropic polypeptide receptor (GIPR), and glucagon-like peptide-1 receptor (GLP-1R). This novel drug has the potential to treat metabolic abnormalities associated with obesity as well as diseases resulting from it due to its distinct mechanism of action. The Phase III trial of this pipeline

drug for treating type 2 diabetes mellitus, non-alcoholic fatty liver disease, and obesity started on August 28, 2023. The results of a Phase II clinical trial have demonstrated significant weight reduction in overweight and obese adults. Specifically, the trial reported an average weight loss of 17.5% and 24.4% at 24 and 48 weeks, respectively.

Conclusions

These findings hold promise for the development of effective weight loss interventions in this population group. There is a need for more phase III studies to provide sufficient clinical evidence for the effectiveness of retatrutide, as current evidence is limited to phase II studies and has yet to prove its worth in a larger population. Here, we aimed to provide an overview of retatrutide's safety and effectiveness in treating obesity.

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British Journal of Clinical Pharmacology

Short- and long-term safety of discontinuing chronic opioid therapy among older adults with Alzheimer's disease and related dementia

Yu-Jung Jenny Wei, Almut G Winterstein, Siegfried Schmidt, Roger B Fillingim, Stephan Schmidt, Michael J Daniels, Steven T DeKosky

Abstract

Background

Limited evidence exists on the short- and long-term safety of discontinuing versus continuing chronic opioid therapy (COT) among patients with Alzheimer's disease and related dementias (ADRD).

Methods

This cohort study was conducted among 162,677 older residents with ADRD and receipt of COT using a 100% Medicare nursing home sample. Discontinuation of COT was defined as no opioid refills for ≥90 days. Primary outcomes were rates of pain-related hospitalisation, pain-related emergency department visit, injury, opioid use disorder (OUD) and opioid overdose (OD) measured by diagnosis codes at quarterly intervals during 1- and 2-year follow-ups. Poisson regression models were fit using generalised estimating equations with inverse probability of treatment weights to model quarterly outcome rates between residents who discontinued versus continued COT.

Results

The study sample consisted of 218,040 resident episodes with COT; of these episodes, 180,916 residents (83%) continued COT, whereas 37,124 residents (17%) subsequently discontinued COT. Discontinuing (vs. continuing) COT was associated with higher rates of all outcomes in the first quarter, but these associations attenuated over time. The adjusted rates of injury, OUD and OD were 0, 69 and 60% lower at the 1-year follow-up and 11, 81 and 79% lower at the 2-year follow-up, respectively, for residents who discontinued versus

continued COT, with no difference in the adjusted rates of pain-related hospitalisations or emergency department visits.

Conclusions

The rates of adverse outcomes were higher in the first quarter but lower or non-differential at 1-year and 2-year follow-ups between COT discontinuers versus continuers among older residents with ADRD.

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DAHOS Study: Efficacy of dapagliflozin in treating heart failure with reduced ejection fraction and obstructive sleep apnea syndrome — A 3-month, multicenter, randomized controlled clinical trial

Liang Xie, Shengnan Li, Xiaojin Yu, Qin Wei, Fuchao Yu & Jiayi Tong

Abstract

Background

The recent discovery of new therapeutic approaches to heart failure with reduced ejection fraction (HFrEF), including sodium-glucose cotransporter-2 (SGLT-2) inhibitors, as well as improved treatment of co-morbidities has provided much needed help to HFrEF. In addition, dapagliflozin, one of the SGLT-2 inhibitors, serves as a promising candidate in treating obstructive sleep apnea (OSA) of HFrEF patients due to its likely mechanism of countering the pathophysiology of OSA of HFrEF.

Methods

This 3-month multicenter, prospective, randomized controlled trial enrolled participants with left ventricular ejection fraction (LVEF) less than 40% and apnea–hypopnea index (AHI) greater than 15. Participants were randomized into two groups: the treatment group received optimized heart failure treatment and standard-dose dapagliflozin, while the control group only received optimized heart failure treatment. The primary endpoint was the difference in AHI before and after treatment between the two groups. Secondary endpoints included oxygen desaturation index (ODI), minimum oxygen saturation, longest apnea duration, inflammatory factors (CRP, IL-6), quality of life score, and LVEF.

Results

A total of 107 patients were included in the final analysis. AHI, LVEF and other baseline data were similar for the dapagliflozin and control groups. After 12 weeks of dapagliflozin treatment, the dapagliflozin group showed significant improvements in sleep parameters including AHI, HI, longest pause time, ODI, time spent with SpO2 < 90%, and average SpO2. Meanwhile, the control group showed no significant changes in sleep parameters, but did demonstrate significant improvements in left ventricular end-diastolic diameter, LVEF, and NT-proBNP levels at 12 weeks. In the experimental group, BMI was significantly reduced, and there were improvements in ESS score, MLHFQ score, and EQ-5D-3L score, as well as

significant reductions in CRP and IL-6 levels, while the CRP and IL-6 levels were not improved in the control group. The decrease in LVEF was more significant in the experimental group compared to the control group. There were no significant differences in the magnitude of the decreases between the two groups.

Conclusions

Dapagliflozin may be an effective treatment for heart failure complicated with OSA, and could be considered as a potential new treatment for OSA.

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Drug Safety

Drug-Drug Interactions Between Glucagon-Like Peptide 1 Receptor Agonists and Oral Medications: A Systematic Review

Bronya Calvarysky, Idit Dotan, Daniel Shepshelovich, Avi Leader & Talia Diker Cohen

Abstract

Background

Glucagon-like peptide 1 receptor agonists (GLP1RAs) are used in the treatment of diabetes and obesity. Their slowing effect of gastric emptying might change oral drug absorption, potentially affecting pharmacokinetics, particularly in the case of medications with a narrow therapeutic index.

Purpose

The purpose of this systematic review is to summarize data on drug-drug interactions between GLP1RAs and oral drugs.

Data Synthesis

Twenty-two reports and six prescribing sheets were included. Treatment with GLP1RAs resulted in unaffected or reduced Cmax and delayed tmax of drugs with high solubility and permeability (warfarin, contraceptive pills, acetaminophen), drugs with high solubility and low permeability (angiotensin converting enzyme inhibitors), drugs with low solubility and high permeability (statins) and drugs with low solubility and permeability (digoxin).

However, the use of GLP1RAs did not exert clinically significant changes in the AUC or differences in clinically relevant endpoints.

Limitations

The major limitations of the studies that are included in this systematic review are the enrollment of healthy subjects and insufficient data in conditions that might affect pharmacokinetics (e.g., kidney dysfunction).

Conclusions

To conclude, reduced Cmax and delayed tmax of drugs co-administered with GLP1RAs are consistent with the known delayed gastric output by the latter. Nevertheless, the overall drug exposure was not considered clinically significant. Dose adjustments are probably not required for simultaneous use of GLP1RAs with oral medications. Still, results should be carefully generalized to cases of background kidney dysfunction or when using drugs with narrow therapeutic index.

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Farmacia Hospitalaria

Presencia de partículas metálicas en parches transdérmicos de medicamentos y riesgo de quemaduras

Ana de Lorenzo-Pinto, Carmen Redondo-Galán, Xandra García-González, Carmen Fernández-Álvarez, Juan Andueza-Lillo, María Sanjurjo-Sáez

Abstract

Objetivo

la presencia de partículas metálicas en los parches transdérmicos de medicamentos se ha asociado con riesgo de quemaduras en la piel cuando a los pacientes se les realiza una resonancia magnética, cardioversión eléctrica o desfibrilación.

Por este motivo, el objetivo del trabajo fue analizar la presencia de partículas metálicas en los parches transdérmicos de medicamentos comercializados en España.

Método

de cada presentación comercial se revisó la ficha técnica para comprobar la presencia de estas partículas en su composición. Si no constaba, entonces se contactó con el laboratorio fabricante.

Resultados

se identificaron 59 presentaciones comerciales de 12 principios activos diferentes. Un 59,3% contenía partículas metálicas o la presencia de las mismas no se pudo descartar. Únicamente en 8 fichas técnicas (13,6%) constaba la advertencia de retirar el parche cuando el paciente recibe alguno de estos procedimientos.

Se elaboró una tabla que incluyó los siguientes aspectos: principio activo, presentación comercial, laboratorio fabricante, necesidad de retirar el parche cuando el paciente es expuesto a un campo magnético o eléctrico y referencias.

Conclusión

más de la mitad de los parches comercializados contenían compuestos metálicos o su presencia no pudo descartarse por el laboratorio fabricante. Sin embargo, esta información solo constaba en un 13,6% de las fichas técnicas.

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Annals of Pharmacotherapy

Baclofen and Tizanidine Adverse Effects Observed Among Community-Dwelling Adults Above the Age of 50 Years: A Systematic Review

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Abstract

Objective

This review highlights adverse effects of baclofen and tizanidine in older community-dwelling adults.

Data Sources

A literature search was conducted, including search terms of “adverse effect,” “baclofen,” “elderly,” “falls,” “fractures,” and “tizanidine.” Studies were included if they described community-dwelling adults aged 50 years and older who received oral baclofen or tizanidine. The Federal Drug Administration Adverse Event Reporting System (FAERS) data were compiled for adverse effect incidence.

Study Selection and Data Extraction:

The literature search was completed in July 2019 and updated in June 2023. Reviews performed by 2 independent reviewers yielded 15 records. FAERS identified 486 (baclofen) and 305 (tizanidine) adverse effects of interest.

Data Synthesis

Two retrospective cohort studies evaluating baclofen use in older adults showed increased hospitalizations for encephalopathy in chronic kidney disease (7.2% vs 0.1%) and end-stage renal disease (daily dose 20 mg or more; relative risk [RR] 19.8, 95% CI = [14.0-28.0]). Other articles were case reports; 10 articles reported dyskinesias, encephalopathy or disorientation, and drowsiness associated with baclofen, and 5 articles reported bradycardia and/or hypotension with tizanidine. The FAERS Public Dashboard revealed 12.1% and 28.7% overall incidence of adverse effects of interest, with a 27.8% and 29.2% incidence of falls for baclofen and tizanidine, respectively. Baclofen and tizanidine are associated with concerning adverse effects in older adults. Alternative agents should be considered, but, if necessary, providers should start at lower doses and increase slowly.

Conclusions

This review highlights the importance of using baclofen and tizanidine with caution in older adults.

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Pharmacoepidemiology and Drug Safety

Risk of acute pancreatitis among new users of empagliflozin compared to sulfonylureas in patients with type 2 diabetes: A post-authorization safety study

Soulmaz Fazeli Farsani, Kristy Iglay, Ling Zhang, Christian Niyonkuru, Laurieann Nessralla, Cynthia J. Girman

Abstract

Purpose

This study was undertaken to evaluate the potential risk of acute pancreatitis with empagliflozin in patients with type 2 diabetes (T2D) newly initiating empagliflozin.

Methods

Data from two large US claims databases were analyzed in an observational study of patients with T2D receiving metformin who were newly prescribed empagliflozin versus sulfonylurea (SU). Because dipeptidyl peptidase-4 inhibitors and glucagon-like peptide-1 receptor agonists have been associated with the risk of acute pancreatitis in some studies, patients on these agents were excluded. Using pooled analyses of data from the two databases (2014–2021), patients initiating empagliflozin were matched 1:1 within database to patients initiating SU using propensity scores (PS) that incorporated relevant demographic and clinical characteristics. Prespecified sensitivity analyses were performed for design parameters.

Results

The analyses identified 72 661 new users of empagliflozin and 422 018 new users of SUs, with both patient groups on concurrent metformin therapy. Baseline characteristics within treatment groups appeared to be similar across the 72 621 matched pairs. After mean follow-up of ~6 months, incidence rates of acute pancreatitis in the pooled matched cohort were 10.30 (95% confidence interval [CI] 9.29–11.39) events per 1000 patient-years (PY) for empagliflozin and 11.65 (95% CI 10.59–12.77) events per 1000 PY for SUs. On a background of metformin, patients newly initiating empagliflozin did not have an increased risk of acute pancreatitis compared with those initiating an SU (pooled PS matched hazard ratio 0.88 [0.76–1.02]) across 75621.42 PY of follow-up.

Conclusions

The results of this voluntary post-approval safety study provide additional evidence that the use of empagliflozin for the treatment of T2D is not associated with an increased risk of acute pancreatitis.

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Risk of bleeding amongst warfarin and direct oral anticoagulant users prescribed immediate antibiotics for respiratory tract infection: Cohort study

Haroon Ahmed, Nicola Reeve, Daniel Farewell, Fergus Hamilton, Mark Ponsford, Julia Hippisley-Cox, Simon Noble

Abstract

Purpose

Incidence of bleeding amongst warfarin and direct oral anticoagulant (DOAC) users is greater following a respiratory tract infection (RTI). It is unclear whether immediate antibiotics modify this association. We estimated the risk of bleeding amongst warfarin and DOAC users with RTI by antibiotic treatment.

Methods

This retrospective cohort study used data from the Clinical Practice Research Datalink (CPRD) GOLD for adults in England prescribed warfarin or a DOAC, who sought primary care for an RTI between 1st January 2011 and 31st December 2019. Outcomes were major bleeding (hospital admission for intracranial or gastrointestinal bleeding), and non-major bleeding (hospital admission or General Practice consult for epistaxis, haemoptysis, or haematuria). Cox models derived hazard ratios (HRs) and 95% confidence intervals (CIs) for each outcome, adjusting for confounders using inverse probability of treatment weighting.

Results

Of 14 817 warfarin and DOAC users consulting for an RTI, 8768 (59%) were prescribed immediate antibiotics and 6049 (41%) were not. Approximately 49% were female, and median age was 76 years. Antibiotics were associated with reduced risk of major bleeding (adjusted HR 0.38, 95% CI 0.25 to 0.58). This was consistent across several sensitivity analyses. Antibiotics were also associated with a reduced risk of non-major bleeding (adjusted HR 0.78, 95% CI 0.61 to 0.99).

Conclusions

Immediate antibiotics were associated with reduced risk of bleeding amongst warfarin and DOAC users with an RTI. Further work is needed to understand mechanisms and confirm whether a lower threshold for antibiotic use for RTI in this population may be beneficial.

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Journal of Clinical Pharmacy and Therapeutics

Factors Influencing Insulin Adherence among Outpatients with Type 2 Diabetes Mellitus and the Impact of Pharmaceutical Intervention: A Randomized Clinical Trial

Ting He, Hao Wang, Wen Sun, Lintong Li, Li Li, Cheng Ji

Abstract

Aims

This study aimed to identify and analyze the factors significantly influencing long-term insulin medication adherence among outpatients and to evaluate whether pharmaceutical interventions targeting these factors can improve patient medication adherence and glycemic control.

Methods

A cohort of 180 patients was recruited from a tertiary hospital in Nanjing, China. Factors potentially influencing insulin adherence were scrutinized employing the KAP (knowledge, attitude/belief, and practice) health behavior model. Baseline characteristics were extracted from the hospital information system, while patient knowledge of the disease and medication, medication adherence, medication beliefs, and management self-efficacy were assessed, respectively, using self-developed questionnaires, MMAS-8, C-DMSES, and BMQ scales. Univariate and multivariate analyses were conducted to determine the impact of these factors on insulin adherence. Following this, participants were randomly allocated to either the intervention or control group. The intervention group received three months of weekly telephone sessions and educational interventions targeting facets such as medication knowledge and beliefs, while the control group received standard care. After the intervention, insulin adherence and glycemic control conditions of both groups were collected and re-evaluated.

Results

After excluding lost-to-follow-up patients, 152 individuals were analyzed (intervention: 75 and control: 77). Multivariate analyses revealed factors influencing insulin adherence, including age, diabetes duration, health insurance status, HbA1c level, disease and medication knowledge, diabetes management self-efficacy, and medication beliefs ($P < 0.05$). Before targeted pharmaceutical care, no significant differences existed in insulin adherence, HbA1c levels, management self-efficacy, knowledge, or medication beliefs between intervention and control groups ($P > 0.05$). However, subsequent pharmaceutical intervention notably improved adherence, HbA1c levels, self-efficacy, knowledge, and medication beliefs ($P < 0.05$).

Conclusion

This study examines the impact of glycemic control, health insurance status, management self-efficacy, level of knowledge, and medication beliefs on improving insulin medication adherence in patients with type 2 diabetes mellitus. Targeted pharmaceutical intervention can enhance medication adherence, improve glucose control, and promote rational insulin use.

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Journal of the American Medical Directors Association

Pharmacotherapy to Improve Cognitive Functioning After Acquired Brain Injury: A Meta-Analysis and Meta-Regression

Ruud van der Veen, Marsh Königs, Simon Bakker, Andries van Iperen, Saskia Peerdeman, Pierre M. Bet, Jaap Oosterlaan

Abstract

Cognitive impairments, common sequelae of acquired brain injury (ABI), significantly affect rehabilitation and quality of life. Currently, there is no solid evidence-base for pharmacotherapy to improve cognitive functioning after ABI, nevertheless off-label use is widely applied in clinical practice. This meta-analysis and meta-regression aims to quantitatively aggregate the available evidence for the effects of pharmacological agents used in the treatment of cognitive impairments following ABI. We conducted a comprehensive search of Embase, Medline Ovid, and Cochrane Controlled Trials Register databases for randomized controlled and crossover trials. Meta-analytic effects were calculated for each pharmaceutical agent and targeted neuromodulator system. Cognitive outcome measures were aggregated across cognitive domains. Of 8,216 articles, 41 studies (4,434 patients) were included. The noradrenergic agent methylphenidate showed a small, significant positive effect on cognitive functioning in patients with traumatic brain injury (TBI; $k = 14$, $d = 0.34$, 95% confidence interval: 0.12–0.56, $P = 0.003$). Specifically, methylphenidate was found to improve cognitive functions related to executive memory, baseline speed, inhibitory control, and variability in responding. The cholinergic drug donepezil demonstrated a large effect size, albeit based on a limited number of studies ($k = 3$, $d = 1.68$, $P = 0.03$). No significant effects were observed for other agents. Additionally, meta-regression analysis did not identify significant sources of heterogeneity in treatment response. Our meta-analysis supports the use of methylphenidate for enhancing cognitive functioning in patients with TBI. Although donepezil shows potential, it warrants further research. These results could guide clinical decision making, inform practice guidelines, and direct future pharmacotherapeutic research in ABI.

Cenobamate is an antiseizure medication (ASM) approved in the US and Europe for the treatment of uncontrolled focal seizures.

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Annals of Internal Medicine

Cost-Effectiveness of Newer Pharmacologic Treatments in Adults With Type 2 Diabetes: A Systematic Review of Cost-Effectiveness Studies for the American College of Physicians

John T. Schousboe, MD, Adrienne Landsteiner, Tyler Drake, Shahnaz Sultan, Lisa Langsetmo, Anjum Kaka, Maylen Anthony, Charles J. Billington, MD, Caleb Kalinowski, MS, Kristen Ullman And Timothy J. Wilt,

Abstract

Background

To systematically review cost-effectiveness analyses (CEAs) of newer antidiabetes medications for type 2 diabetes. Bibliographic databases from 1 January 2010 through 13 July 2023, limited to English.

Study Selection

Nonindustry-funded CEAs, done from a U.S. perspective that estimated cost per quality-adjusted life-year (QALY) gained for newer antidiabetic medications. Two reviewers screened the literature; disagreements were resolved with a third reviewer.

Data Extraction

Cost-effectiveness analyses were reviewed for treatment comparisons, model inputs, and outcomes. Risk of bias (RoB) of the CEAs was assessed using Drummond criteria and certainty of evidence (CoE) was assessed using GRADE (Grading of Recommendations Assessment, Development, and Evaluations). Certainty of evidence was determined using cost per QALY thresholds predetermined by the American College of Physicians Clinical Guidelines Committee; low (>$150 000), intermediate ($50 to $150 000), or high (<$50 000) value per QALY compared with the alternative.

Data Synthesis

Nine CEAs were eligible (2 low, 1 high, and 6 some concerns RoB), evaluating glucagon-like peptide-1 agonists (GLP1a), dipeptidyl peptidase-4 inhibitors (DPP4i), sodium–glucose cotransporter-2 inhibitors (SGLT2i), glucose-dependent insulinotropic peptide agonist (GIP/GLP1a), and insulin. Comparators were metformin, sulfonylureas, neutral protamine Hagedorn (NPH) insulin, and others. Compared with metformin, GLP1a and SGLT2i are low value as first-line therapy (high CoE) but may be of intermediate value when added to metformin or background therapy compared with adding nothing (low CoE). Insulin analogues may be similarly effective but more expensive than NPH insulin (low CoE). The GIP/GLP1a value is uncertain (insufficient CoE).

Conclusion

Glucagon-like peptide-1 agonists and SGLT2i are of low value as first-line therapy but may be of intermediate value when added to metformin or other background therapy compared with adding nothing. Other drugs and comparisons are of low or uncertain value. Results are sensitive to drug effectiveness and cost assumptions.

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Annals of Internal Medicine

Newer Pharmacologic Treatments in Adults With Type 2 Diabetes: A Clinical Guideline From the American College of Physicians

Amir Qaseem, Adam J. Obley, MD, Tatyana Shamliyan, Lauri A. Hicks, Curtis S. Harrod and Carolyn J. Crandall

Abstract

Purpose

Delirium risk assessment in the acute-care setting generally does not account for frailty. The objective of this retrospective study was to identify factors associated with delirium, considering the interdependency of clinical variables with frailty syndrome in complex older patients.

Methods

The clinical records of 587 participants (248 M, median age 84) were reviewed, collecting clinical, anamnestic and pharmacological data. Frailty syndrome was assessed with the Clinical Frailty Scale (CFS). Delirium was the main study endpoint. The correlations of the considered anamnestic and clinical variables with delirium and its subtypes were investigated selecting only those variables not showing a high overlap with frailty. Correlations associated with a 25% excess of frequency of delirium in comparison with the average of the population were considered as statistically significant.

Results

Delirium was detected in 117 (20%) participants. The presence of one among age > 85 years old, CFS > 4 and invasive devices explained 95% of delirium cases. The main factors maximizing delirium incidence at the individual level were dementia, other psychiatric illness, chronic antipsychotic treatment, and invasive devices. The coexistence of three of these parameters was associated with a peak frequency of delirium, ranging from 57 to 61%, mostly hypoactive forms.

Conclusions

In acute-care wards, frailty exhibited a strong association with delirium during hospitalization, while at the individual level, dementia and the use of antipsychotics remained important risk factors. Modern clinical prediction tools for delirium should account for frailty syndrome.

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European Journal of Internal Medicine

Relation between high-sensitivity troponin I serum levels and myocardial ischemia in patients with suspected chronic coronary syndrome: The RESET-MI study

Adam H. Dyer, Claire Murphy, Helena Dolphin, Laura Morrison, Robert Briggs, Brian, Lawlor, Sean P. Kennelly Antonio De VitaIsabella Bruno, Silvia Baron, Filippo Crea, Alessandro Giordano, Gaetano Antonio Lanza

Abstract

Background

Previous studies showed that exercise may increase cardiac troponin serum levels; whether the occurrence of myocardial ischemia influences the changes of exercise-induced troponin raise, however, remains debatable.

Methods

We prospectively enrolled consecutive patients undergoing for the first time an elective stress myocardial perfusion scintigraphy (MPS) because of clinical suspicion of obstructive coronary artery disease (CAD). Patients were divided into 3 groups based on the evidence and degree of stress-induced myocardial ischemia at MPS: 1) group 1, no myocardial ischemia (≤4 %); 2) group 2, mild myocardial ischemia (5–10 %); 3) group 3, moderate-to-severe myocardial ischemia (≥10 %). High-sensitivity cardiac troponin I (cTnI) was measured immediately before (T0) and 1 hour (T1) and 4 h (T2) after the stress test.

Results

One hundred-seven patients (71 males; age 65.6 ± 9.4 years) were enrolled in the study. Serum hs-cTnI concentrations (logarithmic values) significantly increased after MPS, compared to baseline, in the whole population, from 1.47±1.26 ng/L at T0, to 1.68±1.12 ng/L at T1 ($p<0.001$) and 2.15±1.02 ng/L at T2 ($p<0.001$ vs. both T0 and T1). The increase in hs-cTnI did not significantly differ between the 3 groups ($p = 0.44$). The heart rate achieved during the test was the strongest determinant of cTnI increase ($p < 0.001$) after the stress test.

Conclusions

In patients with suspected CAD, stress MPS induces an increase of cTnI that is independent of the induction and extension/severity of myocardial ischemia and is mainly related to myocardial work, as indicated by the heart rate achieved during the test.

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Clinical Decision Support for Hypertension Management in Chronic Kidney Disease. A Randomized Clinical Trial

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Abstract

Background

Chronic kidney disease (CKD) affects 37 million adults in the United States, and for patients with CKD, hypertension is a key risk factor for adverse outcomes, such as kidney failure, cardiovascular events, and death.

Objective

To evaluate a computerized clinical decision support (CDS) system for the management of uncontrolled hypertension in patients with CKD.

Design, Setting, and Participants

This multiclinic, randomized clinical trial randomized primary care practitioners (PCPs) at a primary care network, including 15 hospital-based, ambulatory, and community health center–based clinics, through a stratified, matched-pair randomization approach February 2021 to February 2022. All adult patients with a visit to a PCP in the last 2 years were eligible and those with evidence of CKD and hypertension were included.

Intervention

The intervention consisted of a CDS system based on behavioral economic principles and human-centered design methods that delivered tailored, evidence-based recommendations, including initiation or titration of renin-angiotensin-aldosterone system inhibitors. The patients in the control group received usual care from PCPs with the CDS system operating in silent mode.

Main Outcomes and Measures

The primary outcome was the change in mean systolic blood pressure (SBP) between baseline and 180 days compared between groups. The primary analysis was a repeated measures linear mixed model, using SBP at baseline, 90 days, and 180 days in an intention-to-treat repeated measures model to account for missing data. Secondary outcomes included blood pressure (BP) control and outcomes such as percentage of patients who received an action that aligned with the CDS recommendations.

Results

The study included 174 PCPs and 2026 patients (mean [SD] age, 75.3 [0.3] years; 1223 [60.4%] female; mean [SD] SBP at baseline, 154.0 [14.3] mm Hg), with 87 PCPs and 1029 patients randomized to the intervention and 87 PCPs and 997 patients randomized to usual care. Overall, 1714 patients (84.6%) were treated for hypertension at baseline. There were 1623 patients (80.1%) with an SBP measurement at 180 days. From the linear mixed model,

there was a statistically significant difference in mean SBP change in the intervention group compared with the usual care group (change, −14.6 [95% CI, −13.1 to −16.0] mm Hg vs −11.7 [−10.2 to −13.1] mm Hg; P = .005). There was no difference in the percentage of patients who achieved BP control in the intervention group compared with the control group (50.4% [95% CI, 46.5% to 54.3%] vs 47.1% [95% CI, 43.3% to 51.0%]). More patients received an action aligned with the CDS recommendations in the intervention group than in the usual care group (49.9% [95% CI, 45.1% to 54.8%] vs 34.6% [95% CI, 29.8% to 39.4%]; P < .001).

Conclusions and Relevance

These findings suggest that implementing this computerized CDS system could lead to improved management of uncontrolled hypertension and potentially improved clinical outcomes at the population level for patients with CKD.

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Olezarsen for Hypertriglyceridemia in Patients at High Cardiovascular Risk

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Abstract

Background

Reducing the levels of triglycerides and triglyceride-rich lipoproteins remains an unmet clinical need. Olezarsen is an antisense oligonucleotide targeting messenger RNA for apolipoprotein C-III (APOC3), a genetically validated target for triglyceride lowering.

Methods

In this phase 2b, randomized, controlled trial, we assigned adults either with moderate hypertriglyceridemia (triglyceride level, 150 to 499 mg per deciliter) and elevated cardiovascular risk or with severe hypertriglyceridemia (triglyceride level, ≥500 mg per deciliter) in a 1:1 ratio to either a 50-mg or 80-mg cohort. Patients were then assigned in a 3:1 ratio to receive monthly subcutaneous olezarsen or matching placebo within each cohort. The primary outcome was the percent change in the triglyceride level from baseline to 6 months, reported as the difference between each olezarsen group and placebo. Key secondary outcomes were changes in levels of APOC3, apolipoprotein B, non–high-density lipoprotein (HDL) cholesterol, and low-density lipoprotein (LDL) cholesterol.

Results

A total of 154 patients underwent randomization at 24 sites in North America. The median age of the patients was 62 years, and the median triglyceride level was 241.5 mg per

deciliter. The 50-mg and 80-mg doses of olezarsen reduced triglyceride levels by 49.3 percentage points and 53.1 percentage points, respectively, as compared with placebo ($P<0.001$ for both comparisons). As compared with placebo, each dose of olezarsen also significantly reduced the levels of APOC3, apolipoprotein B, and non-HDL cholesterol, with no significant change in the LDL cholesterol level. The risks of adverse events and serious adverse events were similar in the three groups. Clinically meaningful hepatic, renal, or platelet abnormalities were uncommon, with similar risks in the three groups.

Conclusions

In patients with predominantly moderate hypertriglyceridemia at elevated cardiovascular risk, olezarsen significantly reduced levels of triglycerides, apolipoprotein B, and non-HDL cholesterol, with no major safety concerns identified