The Association of Azithromycin Use with Cardiovascular Mortality¹

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**Background:** Azithromycin is one of the most commonly prescribed antibiotics in the United States, with over 44 million prescriptions dispensed in 2016, and has been associated with increased risk of cardiac death in some studies. It is commonly prescribed for community-acquired pneumonia, uncomplicated skin infections, strep throat, and other infections. Azithromycin was also investigated in combination with hydroxychloroquine as a potential treatment for COVID-19, introducing the general public to the risks of additive QT-prolongation and discussion about possible negative cardiac outcomes. A more full understanding of possible cardiac risks with use of this medication will allow physicians and pharmacists to better evaluate its safety compared to other antibiotics used to treat the same indications.

**Objective:** To estimate relative and absolute risk of cardiovascular and sudden cardiac death after outpatient azithromycin use compared to amoxicillin.

**Study Design:** The study by Zaroff et al. was designed as a retrospective cohort based on two large, diverse, community-based care delivery systems over a 16 year time period from 1998 through 2014. A total of 7,824,681 exposures to either azithromycin or amoxicillin among 2,929,009 patients were analyzed. Inclusion criteria included patients between 30 and 74 years old who had 12 months of health-plan enrollment prior to exposure. Exclusion criteria included receiving both studied antibiotics within a ten day period, hospitalization or nursing home residence, and serious medical conditions. Endpoints were measured in exposure windows of 0-5 and 6-10 days after initial exposure to either antibiotic, with the primary outcomes of cardiovascular death and sudden cardiac death and secondary outcomes of noncardiovascular death and all-cause mortality.

**Results:** Azithromycin was associated with a significantly increased risk of cardiovascular death (RR 1.82 [95% CI 1.23-2.67]), noncardiovascular death (RR 2.17 [95% CI 1.44-3.26]), and all-cause mortality (RR 2.00 [95% CI 1.51-2.63]) compared to amoxicillin within five days of initiation. It was not found to have a statistically significant difference in rate of sudden cardiac death (RR 1.59 [95% CI, 0.90-2.81]) within five days of initiation, and no significant differences were found in the 6-10 day exposure window.

**Conclusions:** Use of azithromycin was associated with an increased risk of cardiovascular death, noncardiovascular death, and all-cause mortality compared to amoxicillin within five days of initiation. Multiple confounding variables were found – patients exposed to azithromycin were more likely to receive cardioprotective medications such as ACEs and ARBs, statins, and beta-blockers. Azithromycin was used more often for ear, nose, and throat infections. Due to these differences in use by indication and other confounders, no direct causality can be drawn between azithromycin use and the associated risks.
**Key Point:** Outpatient azithromycin use was found to be associated with an increased risk of cardiovascular death and noncardiovascular death compared to amoxicillin. This retrospective study is insufficient to establish causality, particularly for noncardiovascular death, due to likely confounding factors. Pharmacists should continue to assess cardiovascular risk factors for patients receiving azithromycin.

**Statin Therapy for Primary Prevention in US Veterans 75 Years and Older**

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*Park Nicollet*

**Background:** Adults 75 years and older are currently the fastest-growing segment of the population, and life tables estimate that those who have reached age 80 will live on average eight to nine additional years. Additionally, incidence and prevalence of atherosclerotic cardiovascular disease (ASCVD) rises with age and remains the leading cause of death in the United States. However, patients 75 years and older are frequently excluded from clinical trials that would otherwise provide guidance on statin therapy in this population. The current stance per the 2019 ACC/AHA cholesterol guidelines is that it may be reasonable to initiate statin therapy for primary prevention in adults 75 years and older, provided that the patient does not have a life-limiting disease.

**Purpose:** The objective of this study was to evaluate the role of new statin use in mortality and primary prevention of ASCVD in veterans 75 years and older.

**Study Design:** The study design was a retrospective cohort study, using electronic Veterans Health Association (VHA) health record data. Patients were eligible for inclusion in the study if they were at least 75 years of age, received regular care for at least two years through the VHA from 2002 to 2012, and were not already on statin therapy for primary ASCVD prevention. Notably, those with cancer, dementia, or paralysis were not excluded from this study in order to create a cohort of patients that resembles clinical practice. Exclusion criteria included any history of statin use, prior ASCVD events, missing demographic data, or death in the first 150 days from baseline. The primary outcomes were all-cause and cardiovascular mortality. Secondary outcomes included MI, ischemic stroke, revascularization with CABG or PCI, and a composite of these events. Follow-up time was measured from date of entry into the study cohort to date of death in the treatment group, or initiation of statin for primary prevention in the control group. Because time to benefit for statins begins two to five years after initiation, sensitivity analysis hazard ratios were determined at two years from the statin start date.

**Results:** Statin use was associated with a significantly lower risk of all-cause mortality (HR 0.75 [95% CI 0.74 – 0.76]) and cardiovascular death (HR 0.8 [95% CI 0.78 – 0.81]) across all age groups, including those 90 years and older. Notably, there was a significant difference for the primary outcome in patients with dementia (P<0.05) but no significant differences according to race, sex, or diabetes status. The mean age of participants was 81.1 years, 97.3% of the study population were men, and 91% were white. Simvastatin was the most commonly prescribed statin (84.8%). The mean follow-up time was 6.8 years. The secondary outcome was statistically significant for three subgroups: composite ASCVD in those with prior dementia vs. those without prior dementia (P=0.02), ischemic stroke according to race (white: HR 0.99 [95% CI 0.97 – 1.02]; black: HR 0.85 [95% CI 0.77 – 0.93]), and revascularization according to age (P=0.01).

**Conclusions:** New statin use among veterans 75 years and older was associated with significantly lower risk of all-cause and cardiovascular mortality, even in those with advanced age and other comorbidities. These results suggest that age alone should not be a determinant for starting or stopping a statin. Additionally, there was no significant difference in the primary outcome according to race, sex, or diabetes status which suggests that an even broader population within this generation of patients may benefit from statin therapy. A limitation of this study is that adverse effects such as myalgias, postulated decline in cognition, drug-drug interactions, and polypharmacy were not assessed and these factors may be significant in deciding whether to start, stop, or continue statin therapy for an older adult. Ultimately, further research is needed to better define the role of new statin therapy for primary prevention in patients 75 years and older.

**Key Point:** Among U.S. veterans 75 years and older without atherosclerotic cardiovascular disease at baseline, new statin use was associated with a significantly lower risk of all-cause and cardiovascular mortality.

**An Efficacy and Safety Comparison of Oral P2Y12 Inhibitors**

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*M Health Fairview*

**Background:** Oral P2Y12 inhibitors are a key component of antiplatelet therapy after acute coronary syndromes (ACS). The three commonly used agents, clopidogrel, prasugrel, and ticagrelor, function by binding to the P2Y12 receptor on platelets and inhibiting adenosine diphosphate platelet activation. Although these agents produce the same result, there are key differences between them. Clopidogrel irreversibly inhibits P2Y12, but it must be converted to its active metabolite. This conversion primarily occurs via CYP3A4 and CYP2B6, and interperson variability is of less concern than with prasugrel.
Finally, ticagrelor is a reversible inhibitor that does not require CYP450 activation. The 2014 AHA/ACC Guideline for the Management of Patients with Non-ST-Elevation Acute Coronary Syndromes recommends that either clopidogrel or ticagrelor be added to aspirin for up to 12 months in medically treated patients, with a slight preference given to ticagrelor. If coronary stenting is performed, all three agents are reasonable options although a slight preference is given to ticagrelor and prasugrel.

Objective: This network meta-analysis aimed to compare the efficacy and safety of clopidogrel, prasugrel, and ticagrelor in patients with ACS.

Study Design: Investigators performed a search of Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, TCTMD, ClinicalTrials.gov, and major congress proceedings to identify randomized trials of clopidogrel, prasugrel, and ticagrelor in patients with ACS published prior to October 19, 2019. Trials were included if they reported cardiovascular (CV) outcomes and followed patients beyond 30 days. Nonrandomized, crossover, and pharmacokinetic/pharmacodynamic trials were excluded. A network meta-analysis was completed to compare the three agents using evidence from direct comparisons trials as well as indirect evidence generated from multiple trials with one common intervention. The primary outcomes included CV mortality, myocardial infarction (MI), stroke, definite or probable stent thrombosis (ST), and major bleeding.

Results: The search led to the inclusion of 12 trials with a total of 52,816 patients. Ticagrelor significantly lowered CV mortality when compared to clopidogrel (HR 0.82 [95% CI 0.72 – 0.92]). However, prasugrel was not found to be significantly different from clopidogrel (HR 0.90 [95% CI 0.80 – 1.01]). Prasugrel and ticagrelor were not significantly different (HR 1.10 [95% CI 0.94 – 1.29]). Prasugrel significantly reduced MI events when compared to clopidogrel (HR 0.81 [95% CI 0.67 – 0.98]), but prasugrel and ticagrelor were not significantly different (HR 0.83 [95% CI 0.64 – 1.07]). Ticagrelor did not significantly reduce MI events in comparison with clopidogrel (HR 0.97 [95% CI 0.78 – 1.22]). However, when assessing only re-MI (excluding periprocedural MI), ticagrelor did significantly reduce events when compared to clopidogrel (HR 0.85 [95% CI 0.73 – 0.98]). Ticagrelor significantly reduced occurrence of definite or probable ST when compared to clopidogrel (HR 0.72 [95% CI 0.58 – 0.90]) as did prasugrel (HR 0.50 [95% CI 0.38 – 0.64]). Prasugrel significantly reduced occurrence of ST compared to ticagrelor (HR 0.68 [95% CI 0.50 – 0.93]). There were no significant differences between ticagrelor, prasugrel, or clopidogrel regarding the outcome of total strokes, hemorrhagic strokes, or ischemic strokes. In the safety analysis, both prasugrel (HR, 1.26 [95% CI, 1.01–1.56]) and ticagrelor (HR, 1.27 [95% CI, 1.04–1.55]) resulted in significantly more major bleeding events than clopidogrel, but no difference was found between prasugrel and ticagrelor (HR 0.99 [95% CI 0.79–1.24]).

Conclusions: This large network meta-analysis suggests that ischemic events may be reduced by using ticagrelor or prasugrel rather than clopidogrel. However, only ticagrelor significantly reduced CV mortality in comparison to clopidogrel. These benefits are offset by an increase in major bleeding events that was seen with both ticagrelor and prasugrel. One limitation of this study is a high level of heterogeneity that was found in the analysis of MI (I2=58.7%) and a moderate level of heterogeneity that was found in the analysis of major bleeding (I2=35.3%).

Key Point: Although ticagrelor and prasugrel may provide superior efficacy to clopidogrel, both agents led to significantly more major bleeding events. These findings are consistent with the 2014 AHA/ACC Guideline for the Management of Patients with Non-ST-Elevation Acute Coronary Syndromes.

**THERAPEUTIC THOUGHT**

**Triple Therapy for Moderate-to-Severe Chronic Obstructive Pulmonary Disease**

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**Background:** Treatment of chronic obstructive pulmonary disease (COPD) follows a stepwise approach. Triple inhaled therapy, including an inhaled corticosteroid (ICS), a long-acting muscarinic antagonist, (LAMA) and a long-acting beta agonist (LABA), has been shown to improve lung function, symptoms, and health status while reducing exacerbations, compared to other inhaler combinations. The 2020 American Thoracic Society COPD guideline recommends use of triple inhaled therapy for patients who remain symptomatic on dual therapy who have had at least one exacerbation requiring antibiotics, oral steroids, or a hospitalization in the last year. Additionally, the 2020 GOLD guideline recommends the addition of an ICS to one or two long-acting bronchodilators in patients with history of hospitalizations due to COPD exacerbations, two or more moderate COPD exacerbations per year, concomitant asthma, or blood eosinophil count > 300 cells/microliter. Little guidance is provided in either guideline regarding dose of the ICS component of inhaled triple therapy.

**Evidence:** The Efficacy and Safety of Triple Therapy in Obstructive Lung Disease (ETHOS) trial investigated both efficacy and safety...
safety of two doses of ICS as part of a triple therapy combination. In this randomized, double blind, parallel-group trial, participants were randomized in 1:1:1:1 fashion to receive twice daily inhalations of low dose triple therapy (160 mcg of budesonide plus 18 mcg glycopyrrolate and 9.6 mcg formoterol), high dose triple therapy (320 mcg budesonide plus 32 mcg glycopyrrolate and 9.6 mcg formoterol), LAMA/LABA dual therapy (18 mcg glycopyrrolate and 9.6 mcg formoterol), or LABA/ICS dual therapy (320 mcg budesonide and 9.6 mcg formoterol). Patients 40-80 years of age with symptomatic, moderate-to-severe COPD were eligible if they used at least two inhaled maintenance therapies at the time of screening. The primary outcome was the annual rate of moderate or severe COPD exacerbations.

An intention-to-treat protocol was used to analyze 8509 patients. The annual rate of moderate or severe exacerbations was significantly lower in the 320 mcg budesonide triple therapy group compared to LABA/LAMA dual therapy (RR 0.76 [95% CI 0.69-0.83], P<0.001) or LABA/ICS dual therapy (RR 0.87 [95% CI 0.79-0.95], P=0.003). Additionally, the annual rate of moderate or severe exacerbations in the low dose triple therapy group was significantly lower when compared to LABA/LAMA dual therapy (RR 0.75 [95% CI 0.69-0.83], P<0.0001) and LABA/ICS dual therapy (RR 0.86 [95% CI 0.79-0.95], P=0.002). However, there was no difference between the two triple therapy groups. During analysis of secondary outcomes, it was found that high dose triple inhaled therapy demonstrated lower risk of death from any cause, while the finding was not significant in the low dose triple inhaled therapy group. No unexpected safety concerns were observed.

**Discussion and Clinical Impact:** The ETHOS trial demonstrates reduced risk of moderate or severe COPD exacerbations when using either low or high dose ICS as part of an ICS/LABA/LAMA combination. While no difference was detected between triple therapy groups, the study was not powered or configured to detect a difference. This study also demonstrates lower all-cause mortality with use of high dose ICS as part of a triple inhaled therapy regimen. Interestingly, this study calls into question the role of ICS/LABA dual therapy combinations. Current GOLD guidelines suggest first escalating to ICS/LABA therapy for those patients who have elevated eosinophil levels and frequent exacerbations while on LABA or LAMA monotherapy, prior to initiation of triple therapy. However, the ETHOS trial demonstrated a significant reduction of exacerbations with triple inhaled therapy compared to ICS/LABA therapy, suggesting there may be greater benefit to escalating from monotherapy to triple therapy in these patients, however, only patients on dual-inhaler management COPD management were included in this trial. Escalating to dual ICS/LABA therapy with close monitoring of symptom improvement first, as the guideline would suggest, is reasonable before introducing additional medication burden and the cost associated with triple inhaled therapy.

**Pharmacists Authorized to Prescribe Self-Administered Hormonal Contraceptives**

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**Background:** Pharmacists can prescribe contraceptives in the District of Columbia and 11 states. The 2020 Minnesota legislative session amended 151.37 to state that pharmacists have the authority to prescribe self-administered hormonal oral contraceptives (OC) for the intended use as contraception. This amendment went into effect August 1st, 2020. The Board of Pharmacy will establish a standardized protocol by January 1st, 2021. Pharmacists who choose to utilize these prescribing privileges must successfully complete a training program on OC and maintain continuing education requirements.

Pharmacists are one of the most accessible healthcare providers. A study published in the Journal of Women’s Health in 2016 followed 1385 women, 68% of whom have tried to get a OC, 29% of these women reported problems accessing an initial prescription or refills. Over 19 million women in America lack access to contraceptive methods. Worldwide there are at least 120 million couples in need of contraceptives, 80 million pregnancies are unintended and 45 million resulted in abortions. There is no guidance available regarding how to implement the new amendment into community-based pharmacies.

**Evidence and Discussion:** A study completed in San Francisco, CA in April 2020 evaluated the number of community pharmacies that have effectively and efficiently prescribed OC. Only 11% of community pharmacies in California are prescribing OC due to barriers such as reimbursement, liability, time available and lack of knowledge. A cross-sectional study was conducted by calling 113 community pharmacies in San Francisco and asking a series of interview questions. The questions involved if pharmacies are prescribing OC, description of the prescribing process, pharmacists perception of the effectiveness, advantages, disadvantages and barriers, any recommendations and how COVID-19 has affected the demand for pharmacist prescribing. CVS, Walgreens, Safeway, Costco and independent pharmacies were called and 21 out of 113 (19%) stated that they prescribed OC. 12 of those 21 agreed to complete the interview. Factors the pharmacies could control that gave success in prescribing OC in the pharmacies preception included a company protocol, advertising, and pharmacist engagement. Large corporations provided payment for training that the pharmacists were required to complete. Factors outside the control of the pharmacies that gave success were collaborations with local clinics or pharmacy location. Lack of time was a barrier identified, 8 of the 12 pharmacists stating if the process was streamlined it would improve workflow. Two of the 12 pharmacists suggested scheduling appointments. 9 of the 12 pharmacies interviewed did not have a private consultation room, which is a barrier.
THERAPEUTIC THOUGHT (cont.)

As part of the prescribing process, an accurate blood pressure reading is required. Lastly, some pharmacies saw an increase in need, however others saw a decrease in need due to COVID-19. The study limitations included a small sample size and geographical location of only one city. Statistical significance was not tested due to sample size, but the reports given by these 12 pharmacies can be a model on how to successfully prescribe OC in pharmacies.

Clinical Impact: This new legislation allows pharmacists the ability to intervene, with roughly 50% of all pregnancies being unintended. The study completed on the successful implementation of hormonal contraceptives prescribing in San Francisco community pharmacies gives Minnesota and other community pharmacies a model to implement pharmacists prescribing self-administered hormonal contraceptives.

FROM THE PHARMACY PRESS

Drug-Drug Interactions: Antidepressants and Beta Blockers*1
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Background: Beta blockers such as metoprolol, and antidepressants such as fluoxetine, paroxetine, duloxetine and bupropion are commonly prescribed together for the management of cardiovascular disease and depression respectively. These two medication classes also rely on the common CYP2D6 pathway for metabolism. Concurrent administration of antidepressants and beta blockers can result in increased beta blocker exposure, which can lead to drug toxicity and events such as decreased heart rate, hypotension and falls.

Objective: The objective of the study was to investigate whether the interaction between beta blockers and antidepressants with moderate to strong CYP2D6 inhibition resulted in increased morbidity, evidenced by hospitalization or emergency department visits for hemodynamic events.

Study Design: The study was a retrospective cohort study of adults enrolled in the California fee-for-service (FFS) Medicaid Program (Medi-Cal) from January 1, 2004 to December 31, 2011. The study group included Medi-Cal patients who were 18 years or older, enrolled in the FFS program for a minimum of 12 months, and were on an immediate or sustained release beta blocker and antidepressant undergoing CYP2D6 metabolism. The primary outcome was the time to first hospitalization or emergency department visit, suggestive of excessive beta blockade, within 30 days of receiving an antidepressant concurrently with a beta blocker.

Results: A total of 21,292 study participants were identified and the criteria for the study. The female population represented in the study was 52.1% with 31.2% of the study population receiving a beta blocker and antidepressant concurrently. The discontinuation rate within 30 days of therapy initiation was 63%. Time to hospitalization or emergency department visits showed that 4.3% of the study population experienced adverse outcomes, with dizziness or syncope as a common adverse outcome.

A univariate analysis showed that patients on an antidepressant with strong to moderate CYP2D6 inhibition were more likely to experience adverse events than patients on weak CYP2D6 inhibition (1.64 [95% CI 1.14-2.40], P=0.008 vs 1.33 [95% CI 0.91-1.95], P=0.14) and a multivariate analysis adjusted for covariates showed (1.53 [95% CI 1.03-2.81], P=0.04). Time to hospitalization and emergency department visits for all causes was 37% for patients receiving a beta blocker higher doses of the beta blocker were associated with an increase in hospitalization or emergency department visits.

Limitations: The study hypothesized increased beta blocker concentrations with concurrent use of an antidepressant, but the researchers were not able to quantify plasma concentrations to support their claim. Secondly, the researchers used prescription refills to estimate adherence, which also showed that 61% of patients did not refill the antidepressant after the first 30 days supply.

Conclusion: The study suggested that concurrent administration of beta blockers and antidepressants with moderate to strong CYP2D6 interaction can lead to serious hemodynamic events requiring hospitalization or an emergency department visit.

Key Point: Beta blockers and antidepressants are commonly prescribed together, and it is important that pharmacists perform a prospective drug use review to decrease adverse events from using these medications together.

Burnout among clinical pharmacists: causes, interventions, and a call to action*2
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Background: Burnout among health-care professionals can be related to a multidimensional framework consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment. Recent evidence suggests the rate among clinical pharmacists is as high as 66%. Based on the evidence reviewed in this article, causes of burnout can be divided into

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individual factors, organizational factors, or a mix of the two called situational factors. Examples of individual factors include demographics, personality traits, and age. Organizational factors are mainly work overload and increasing job demands relative to job resources. Clinical pharmacists have unique stressors that can contribute to burnout, such as working in high-stress environments with little to no margin for error. The consequences of burnout may include reduced job satisfaction and increased rates of various mental health diagnoses. Increased levels of stress and exhaustion may also lead to adverse patient events, such as medication errors, patient dissatisfaction, and even mortality. This article details the available evidence related to the assessment of burnout in health care professionals and how to prevent or combat it from occurring in clinical pharmacists.

Discussion: In order to assess burnout among healthcare professionals, a number of validated tools have been used. The American Pharmacists Association recently began offering pharmacists the ability to take the Well-Being Index, which is a tool developed by Mayo Clinic to assess and track well-being. Additionally, there is evidence to suggest that the main driver of burnout is the degree of motivational mismatch between a person and their work, leading to decreased engagement. An article by Leiter and Maslach published in 1999 describes this concept by outlining a framework with six different areas of work life that has been discussed in the literature. This includes workload, control, reward, community, fairness, and values. For example, a mismatch in workload can occur because pharmacists are often involved in tasks outside of providing direct patient care, such as teaching, precepting, research, and administrative duties.

Practice Impact: Research has shown that ways to combat burnout can be divided into two categories: individual-focused and organization-focused interventions. Most research regarding burnout is centered on individual strategies, such as mindfulness techniques, stress-management training, and physical modalities such as exercise and sleep. Organization-focused interventions include alterations in workload, improvements in work-life integration, and changes in the organization’s values and culture. Additionally, redesigning workflow can be impactful in reducing burnout. The knowledge and skills of pharmacy technicians can be utilized to improve the workload balance for clinical pharmacists, similar to how pharmacists sharing clinical duties with physicians can decrease rates of physician burnout.

One proposed strategy in the literature to combat burnout is to clearly state the job responsibilities and expectations of the position when hiring. Additionally, strong support from leaders in the organization is necessary to ensure that the demands placed on employees are consistent with their expectations and resources. A third strategy is to provide career guidance to residents and students to increase the likelihood these individuals will pursue jobs that they will be satisfied in. Similarly, it is important for preceptors to residents and students to model ways to promote well-being and engagement in their careers. Finally, continuous career guidance should be available for pharmacist clinicians to ensure their role is aligning with their personal and professional values. Overall, the authors concluded that the available evidence indicates there is a lack of research on what aspects of burnout are unique to clinical pharmacists. In order to properly address these issues, there needs to be a shift to more research devoted specifically to pharmacist burnout and ways to fight it.

Pharmacist-Led NSAID Deprescribing Program

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Background: Non-steroidal anti-inflammatory drugs (NSAIDs) are commonly prescribed medications used both acutely and chronically to treat pain associated with inflammatory conditions, such as rheumatoid arthritis and osteoarthritis. Although they are very effective in relieving this pain, NSAIDs can be associated with adverse effects such as gastrointestinal (GI) bleeding and nephrotoxicity. Long-term use may lead to a multitude of problems, such as GI ulcers, acute kidney injury (AKI) or worsening of hypertension. The geriatric population is particularly at risk, as they are prone to medication-related adverse events. Deprescribing programs, which are provider-led protocols that gradually decrease doses and eventually lead to the discontinuation of medications, may be used to help avoid unnecessary risk and potential harm to patients. Studies of this sort are in abundance for many medication classes, however, NSAID deprescribing protocols lack specific evidence and guidance.

Objective: To compare and contrast the safety, efficacy, and economic benefits of standardized pharmacist-led deprescribing of NSAIDs versus usual care within an integrated healthcare system.

Study Design: This research was conducted via a retrospective, propensity score-matched cohort study designed to include elderly patients (≥65 years of age) who qualified for NSAID deprescribing. Eligible patients in the control group were matched to the intervention group via propensity score matching at a ratio of 4:1. Patients in the deprescribing group were assessed by a pharmacist and had their NSAID regimen deprescribed. This process typically included an initial 25-50% dose reduction with a two to four week follow-up, and adjustments made as needed. Pharmacists were also available to patients via a secure online messaging platform. Patients were followed for six months, until membership ended, or death, whichever occurred first. The effectiveness and safety outcomes measured the occurrence of three adverse events: GI bleeds, AKI, and exacerbation of pain...
MISCELLANEOUS NEWS

Dapagliflozin now indicated for treatment of heart failure with reduced ejection fraction

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Farxiga (dapagliflozin) is a sodium glucose co-transporter two (SGLT2) inhibitor that was first approved as a glucose-lowering agent for use in patients with type two diabetes. The DECLARE-TIMI trial later established that treatment with dapagliflozin could also result in fewer hospitalizations for heart failure in patients with diabetes. This, along with two other cardiovascular outcomes trials of SGLT2 inhibitors -- CANVAS for canagliflozin and EMPA-REG for empagliflozin -- presumably led to the DAPA-HF trial, which studied the rates of cardiovascular death or worsening heart failure in patients on dapagliflozin.

DAPA-HF was a multicenter, randomized, double-blind, placebo-controlled trial that studied whether the addition of dapagliflozin could benefit patients (n=4744) with heart failure with reduced ejection fraction (HFrEF) and New York Heart Association (NYHA) Class II through IV symptoms, whether or not they had diabetes. With a follow-up period of 18 months, people who received dapagliflozin 10 mg daily had fewer cardiovascular deaths, hospitalizations for heart failure, and urgent care visits for heart failure requiring intravenous diuretic therapy compared to placebo.

Farxiga (dapagliflozin) is the first SGLT2 inhibitor approved for use in patients with HFrEF. This designation has not yet been incorporated into cardiology clinical guidelines, which were last updated by the American College of Cardiology (ACC) and American Heart Association (AHA) in 2017; however the DAPA-HF trial sheds light on dapagliflozin’s potential new place in therapy.

Routine Testing for Hepatitis C Can Cut Costs, Save Lives

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According to the American Journal of Medicine, testing has shown that routine screening for adults over 18 years of age for Hepatitis C virus (HCV) is more beneficial than the typical, previously used, risk-targeted screening. A simulation was performed to compare the two models between 57 different federally qualified health centers. Outcomes that were evaluated include: life expectancy, quality-adjusted life years, cases identified, cases treated and cured, and incremental cost-effectiveness ratio. In the first month of the study 68% more cases were identified by using a routine rapid test rather than the previous risk targeted screening approach. Overall, routine testing led to 75% case identification, compared to targeted screening of 7%, over the course of the study, leading to a 22% reduction in deaths among those with liver cirrhosis. These study findings led the CDC and U.S. Prevention Services Task Force to update their recommendations to include a one-time HCV testing screening for all adults over the age of 18.
Walgreens and VillageMD announced in July that they are beginning a $1 billion nationwide rollout of full-service primary care services connected to Walgreens stores in 30 U.S. cities over the next five years. VillageMD is a Houston-based primary care service provider which offers primary care visits in clinics, virtually, in patient’s homes, and now in Walgreens pharmacies through this partnership. In November 2019, “Village Medical at Walgreens” began integrating pharmacists into a physician-led primary care practice supported by nurse practitioners, mental health specialists, and dietitians, within several Walgreens community pharmacy locations in Houston, TX. This partnership aims to be unique by providing a more comprehensive care approach as opposed to the acute care treatment model seen in traditional “Minute Clinics”. Positive results including high patient satisfaction and patient loyalty (Net Promoter Scores >90) have supported the expansion of this model as a unique nationwide partnership. Data collected by the initial sites corroborate current literature showing that pharmacist integration into primary care teams helps increase medication adherence and improve health outcomes. The goal is to open 500-700 more “Village Medical at Walgreens” locations across the U.S offering patients easier access to a multi-disciplinary team. Specifically, more than 50% of the expansion sites are to be implemented in Health Professional Shortage Areas and Medically Underserved Areas/Populations and are set to include in-person clinic visits, 24/7 telehealth, and at-home visits. In addition to expansion of sites and services, Walgreens and VillageMD are looking to expand primary care job opportunities by 3,600 across these locations.

These results are important to draw attention to the ideal that healthcare workers are expected to do no harm. When prescribing opioids, the balance of harm and benefit must be carefully considered.

REFERENCES

REFERENCES (cont.)


