into harmful drinking behavior such as binge drinking. Future analyses should examine the impact of suggestibility on alcohol-related phenotypes across the spectrum of drinking from social to binge and heavy drinking patterns.

2273

Synthetic cannabinoid usage among psychiatric inpatients

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OBJECTIVES/SPECIFIC AIMS: Synthetic cannabinoids (SC) are widely available and are associated with acute psychosis. Our recent study indicated that SC using psychiatric inpatients admitted in 2014 had more psychotic symptoms, aggression, and agitation compared with cannabis [marijuana (MJ)] using patients. The current study will review more charts and will characterize the demographics and presentations of current SC Versus MJ using patients. METHODS/STUDY POPULATION: A chart review was conducted of patients admitted to a New York City inpatient dual diagnosis psychiatric unit from 2014 to 2016. Inclusion criteria were self-reported current SC use or MJ use, or urine toxicology (+) for MJ. RESULTS/ANTICIPATED RESULTS: In total, 585 charts met inclusion criteria, 168 reported current SC use (40 f, 128 m SC users; 122 f, 295 m MJ users). SC using patients were younger ($p = 0.050$), more likely to be Black ($p = 0.003$), and homeless or living in a shelter ($p = 0.001$). SC users were also more likely to be agitated (OR: 2.26) and aggressive (OR: 2.04) and have psychotic symptoms (OR: 3.03) compared with MJ users. SC users received more PRN medication ($p < 0.001$) and had longer lengths of stay ($p = 0.001$). DISCUSSION/SIGNIFICANCE OF IMPACT: Results demonstrate that current SC users had a different demographic profile compared with current MJ users. Our results also support our previous findings: SC using patients were more likely to be agitated and aggressive and were more likely to demonstrate positive psychotic symptoms.

2477

Targeting pulsatile load to increase exercise capacity and quality of life after TAVR for severe aortic stenosis

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OBJECTIVES/SPECIFIC AIMS: The objective of the study is to test the effect of oral inorganic nitrate on the primary outcomes of exercise capacity and quality of life in patients who have undergone TAVR for severe aortic stenosis. We will also test the effect of the study drug on various physiology endpoints, including systemic vasodilator response to exercise, LV diastolic function and myocardial strain, late systolic LV load and pulsatile arterial wave reflections. METHODS/STUDY POPULATION: This is a randomized double-blind crossover clinical trial, in which 24 subjects who underwent TAVR for severe AS 3 or more months before enrollment will receive the following 2 interventions, in randomized order: (1) Potassium nitrate (KNO_3), at a dose of 12–18 mmol/day by mouth for ~4 weeks, or (2) Potassium chloride (KCl), at a dose of 12–18 mmol/day by mouth for ~4 weeks. A 1-week washout period will be introduced between the 2 interventions. RESULTS/ANTICIPATED RESULTS: We hypothesize that sustained oral administration of potassium nitrate will lead to improvement of exercise capacity and quality of life in this population. DISCUSSION/SIGNIFICANCE OF IMPACT: His study will have a significant impact on assessment and management of patients after TAVR. We will gain a better understanding of physiologic abnormalities leading to exercise intolerance after TAVR. In addition, there are currently no proven therapies that improve exercise capacity in this population.

2020

The clinical implications of a positive prostate cancer screen in patients undergoing a cardiac transplant evaluation

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OBJECTIVES/SPECIFIC AIMS: Screening the general population for prostate cancer with prostate specific antigen (PSA) continues to be controversial. Patients with advanced heart failure undergoing evaluation for suitability for cardiac transplantation are often requested to undergo prostate cancer screening, with guiding evidence generated from the general population. The objective of this study is to determine the clinical implications of a positive prostate cancer screen result in this patient population. METHODS/STUDY POPULATION: A retrospective cohort study was performed on all men that were referred to a tertiary care cardiac transplant center between January 2000 and December 2015. Patients were classified as having either a "positive screen" (PSA ≥ 4 ng/mL) or a "negative screen" (PSA < 4 ng/mL) at the point of evaluation. The primary outcome of time to listing for cardiac transplant (days) was calculated from the date of referral to the date of listing. A multivariable Cox proportional hazards model was developed to assess the association between a positive prostate cancer test result and listing for cardiac transplantation. RESULTS/ANTICIPATED RESULTS: Among the 704 patients included in this study, 66 men (9.4%) had a positive prostate cancer screen result. Men with a positive prostate cancer screen were approximately 4 year older (mean 58.5 vs. 54.1 years), more likely to have a diagnosis of Ischemic Cardiomyopathy (74% vs. 53%) and require continuous mechanical support (61% vs. 16%) at the point of transplant evaluation. The median time for listing for cardiac transplant was greater in patients with a positive PSA (119 vs. 48 days, $p < 0.05$). After adjusting for age, renal function, clinical status at evaluation, history of COPD, and year of referral, patients with a positive prostate cancer screen had a reduced hazards ratio (HR) for progressing to cardiac transplant listing compared with those with a negative screen (HR 0.58, 95%CI: 0.38–0.91). DISCUSSION/SIGNIFICANCE OF IMPACT: Screening patients undergoing cardiac transplant evaluation for prostate cancer with PSA has a low diagnostic yield. An individual's PSA value is influenced by their age and clinical status at the time of screening, with a positive screen being associated with a reduced likelihood for progressing to listing for cardiac transplant.

2448

The effect of allopurinol on pediatric patients undergoing maintenance chemotherapy for acute lymphoblastic leukemia or lymphoblastic lymphoma

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OBJECTIVES/SPECIFIC AIMS: This study aims to assess the safety, feasibility, clinical benefits and pharmacodynamics of adding allopurinol to standard maintenance therapy that includes 6-mecaptopurine (6-MP) in pediatric patients with acute lymphoblastic leukemia (ALL) or lymphoblastic lymphoma. Our goal is to investigate if allopurinol improves hepatotoxicity and GI toxicity, if it safely decreases acute neutrophil count (ANC), if it reduces the 6-MP dose required during chemotherapy, and if it works through our hypothesized mechanism by lowering the levels of the toxic metabolite, 6-methylmecaptopurine (6-MMP) and by raising the levels of the active metabolite, 6-thioguanine (6-TGN). METHODS/STUDY POPULATION: This is a single arm, nonblinded pilot study of patients under age 30 years who were being treated in the maintenance phase of therapy for ALL or lymphoblastic lymphoma, and had adverse effects such as high 6-MMP:6-TGN ratio, high ANC, and high liver enzymes. Patients enrolled were started with allopurinol in addition to ongoing oral chemotherapy. Data from beginning maintenance to end of chemotherapy was collected in the electronic medical record, EPIC for the 13 patients enrolled at Johns Hopkins, and data analysis was conducted using STATA and Excel. RESULTS/ANTICIPATED RESULTS: Initial data analysis reveals that the required dose of 6-MP after addition of allopurinol to the chemotherapy regimen was significantly lower compared with that before the addition of allopurinol in 11 out of the 12 patients assessed ($p < 0.05$). Among the 10 patients that were assessed for 6MMP:6TG ratio, all had lower average 6MMP:6TGN ratios after allopurinol compared to before allopurinol; the percentage of weeks that goal 6MMP:6TGN ratio (<40) were maintained were statistically significant in 6 patients ($p < 0.05$) and close to significance in 2 other patients ($p = 0.057$). The percentage of weeks that patients maintained alanine aminotransferase levels below 120 was significantly greater after addition of allopurinol compared to before the addition of allopurinol in 9 out of 13 patients assessed, suggesting that allopurinol may be associated with reduced hepatotoxicity. Further data analysis is ongoing to assess the percentage of weeks that patients maintained goal total bilirubin, direct bilirubin, and ANC, as well as average number of admissions for infections and average number of therapy holds after allopurinol addition compared to before allopurinol

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