our participants to a healthier lifestyle, they could maintain lower blood pressure without requiring medication.

19144

Effect of Mesalamine on Metabolic Syndrome risk factors in Ulcerative Colitis Patients: A Retrospective study

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ABSTRACT IMPACT: Currently, there are no medications to treat metabolic syndrome and our research sheds light on a potential therapeutic that could prove beneficial for this disease that affects one-third of the US population. OBJECTIVES/GOALS: Our goal was to determine the role of the GI tract in MetS, specifically how approved GI-directed medications affect metabolic parameters. Thus, we assessed the effects of mesalamine, a common therapeutic utilized to treat mild to moderate UC, on metabolic parameters in comorbid UC and MetS patients METHODS/STUDY POPULATION: This was a retrospective study with data extracted from Cerner's HealthFacts database across the United States (US). Inclusion criteria included adult patients ($\geq$18 years old) with a diagnosis of UC and at least 3 of the 5 metabolic risk factors which included i) dyslipidemia, ii) low HDL, iii) hyperglycemia, iv) hypertension, and v) increased abdominal obesity as determined by elevated BMI. A total of 6197 patients across the US between the years of 2007 and 2017 were included. We pulled patients who had a mesalamine prescription within +/- 7 days of an encounter in which they were diagnosed with UC (index date) and the closest values to 3 and 12 months after the index date. Mean age for patients was 53.8 ±19.9, with predominance of female sex (52.9%) and white race (78.0%). RESULTS/ANTICIPATED RESULTS: There was an observed reduction in BMI, fasting glucose, and increase in HDL levels post start of mesalamine treatment along with a decrease in inflammatory markers (ESR and CRP) ($p<0.001$). DISCUSSION/SIGNIFICANCE OF FINDINGS: The GI tract contributes to numerous disorders associated with metabolic dysfunction. Our retrospective analysis revealed mesalamine treatment in comorbid UC and MetS patients improved metabolic parameters, providing evidence that targeting the GI tract in these individuals potentially improves dysregulated metabolic processes.

29120

Classification of Individuals Across the Spectrum of Problematic Opioid Use: Clinical Correlates and Longitudinal Associations with Mortality

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ABSTRACT IMPACT: A better understanding of the spectrum of problematic opioid use will lead to more targeted treatments. OBJECTIVES/GOALS: It is unclear how to approach treatment of individuals with problematic opioid use who do not clearly meet criteria for opioid use disorder (OUD). We aim to characterize clinical, demographic, and medication use at time of identification of problematic opioid use across the spectrum as well as identify predictors of poor outcomes. METHODS/STUDY POPULATION: A national sample of Veterans coded as having opioid abuse or dependence were previously categorized as (1) high likelihood of OUD, (2) limited aberrant opioid use, and (3) prescribed opioid use with no evidence of aberrant use based on chart review. We will describe how individuals in these three categories differ demographically and clinically. We will then use a trained binary logistic regression model to predict whether individuals with limited aberrant opioid use more closely resemble category (1) or (3). Cox proportional hazards models will be used to predict all-cause mortality, suicide-related mortality, opioid-overdose related mortality, and hospitalization over a three-year period using the three categories as predictors and adjusting for relevant covariates. RESULTS/ANTICIPATED RESULTS: We anticipate that Veterans with a high likelihood of OUD will be more likely to experience homelessness and have more psychiatric comorbidities (especially PTSD). We hypothesize that Veterans with prescribed opioid use and no evidence of misuse will be significantly older, more likely to have disability, medical comorbidities (ie., chronic pain, cancer), more prescriptions for non-opioid analgesics, and be prescribed higher doses of opioids. Using a trained binary logistic regression model, we predict that Veterans with limited aberrant opioid use will more closely resemble Veterans with a high likelihood of OUD. We expect that all categories of problematic opioid use will have a high risk of mortality, with a high likelihood of OUD associated with the greatest risk of premature death. DISCUSSION/SIGNIFICANCE OF FINDINGS: Identifying and better characterizing individuals with limited aberrant opioid use may be an important opportunity to intervene prior to development of severe OUD. Future research will focus on targeting interventions to this population, which may have specific needs that are separate from classic OUD or simple pain-related opioid dependence.

35336

Effect of Nuclear Soluble Adenylyl Cyclase (sAC) on Melanoma Treatment Response

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ABSTRACT IMPACT: Our data identify a novel candidate for combination strategy in melanoma treatment, and can inform clinicians in their decision-making process regarding therapeutic intervention for melanoma patients. OBJECTIVES/GOALS: Soluble adenylyl cyclase (sAC) is a novel source of cyclic AMP (cAMP). In melanoma, nuclear sAC localization has an established diagnostic utility and we newly found that nuclear sAC functions as a tumor suppressor by inhibiting Hippo pathway, which affects treatment response. Here, we examine the effect of nuclear sAC on melanoma treatment response. METHODS/STUDY POPULATION: We developed a doxycycline inducible system for increasing sAC activity only in the nucleus. We assessed whether nuclear sAC activity affects treatment response, using BRAFV600 human melanoma cell lines. Using a clonogenic assay, we examined how nuclear sAC activity affects growth inhibition in the presence of a BRAF inhibitor, vemurafenib. Our findings will be confirmed in vivo using tumor xenografts. After tumor formation in NSG mice, mice will be randomized to be fed