interventions to prevent worsening opioid abuse prevalence are expected to improve patient outcomes.

3110

The association between components of the Life's Simple Seven and incident end stage renal disease in the Southern Community Cohort Study

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OBJECTIVES/SPECIFIC AIMS: The Life's Simple 7 (LS7) metric was created by the American Heart Association with the goal of educating the public on seven modifiable factors that contribute to heart health. While it is well documented that these ideal health behaviors lower risk of cardiovascular disease (CVD) in the general population, the association between the LS7 ideal health metrics and end stage renal disease (ESRD) risk has not been examined in a lower socio-economic population at high risk for both ESRD and CVD. Our objective is to examine the association between the LS7 score and incident ESRD in a cohort of white and black men and women in the southeastern US, where rates of CVD and ESRD are high. METHODS/STUDY POPULATION: The Southern Community Cohort Study recruited ~86,000 low-income blacks and whites in the southeastern US (2002-2009). Utilizing a nested case-control design, our analysis included 1628 incident cases of ESRD identified via linkage of the cohort with the United States Renal Data System (USRDS) from January 1, 2002 to March 31, 2015. Controls (n = 4884) were individually matched 3:1 with ESRD cases based on age, sex, and race. Demographic, medical, and lifestyle information were obtained via baseline questionnaire. The AHA definitions for ideal health were used for non-smoking (never or quit >12 months), body mass index (BMI<25kg/m2) and physical activity (>75 min/week of vigorous physical activity or >150min/week of moderate/vigorous activity). Modified definitions were used for consuming a healthy diet [Healthy Eating Index (HEI10) score>70] and for blood pressure, fasting plasma glucose, and total cholesterol, based on self-reported no history of diagnosis of hypertension, diabetes, and hypercholesterolemia, respectively. The number of ideal health parameters were summed to generate the LS7 score, which ranged from 0-7 with higher scores indicating more ideal health. Adjusted odds ratios (95% confidence intervals) for incident ESRD associated with LS7 score were calculated using conditional logistic regression models, adjusting for income and education. The SCCS ESRD case-cohort dataset will be available by TS 2019 and analyses will be completed to adjust for baseline estimated glomerular filtration rate (eGFR) as a marker of kidney function and to examine whether eGFR modifies the relationship between LS7 and incident ESRD. RESULTS/ ANTICIPATED RESULTS: At baseline, mean age was 54 years, 55% (3600) of participants were women, and 87% (5656) were black. A total of 58% (943) of ESRD cases were non-smokers compared to 54% (2633) of controls. ESRD cases had higher prevalence of BMI>25 kg/m2 (81% vs. 74%), hypertension (84% vs. 59%), hypercholesterolemia (48% vs. 34%), and diabetes (66% vs. 22%) compared to controls. A total of 18% (839) of controls and 12% (194) of ESRD cases met ideal exercise recommendations, and 20% of either cases (302) or controls (916) had a HEI10 score above 70. The median LS7 score for controls and ESRD cases was 3 and 2, respectively, and 17% (983) of participants had a low score (0-1) while 2% (105) met 6 or 7 ideal health metrics. Higher LS7 score was associated with lower odds of ESRD (P-trend<0.001). Participants with LS7 score >3 (above median) had 75% reduced odds of ESRD (OR 0.25; 95% CI 0.22, 0.29) compared to those with a score of 2 or less. DISCUSSION/SIGNIFICANCE OF IMPACT: In the SCCS population, the presence of any 3 or more ideal health behaviors is associated with reduced odds of developing ESRD. The components of the LS7 represent important modifiable risk factors that may be targets for future interventions driven by the patient. The attributable risk due to each factor is needed to dissect which ideal behaviors are the most beneficial.

3244

The Autonomic Nervous System as a Potential Therapeutic Target in Huntington Disease

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OBJECTIVES/SPECIFIC AIMS: This study (1) investigated the presence and severity of autonomic nervous system (ANS) dysfunction in patients with pre-symptomatic Huntington Disease (HD) and (2) determined if pharmacologic manipulation of the ANS could modify the progression of HD. METHODS/STUDY POPULATION: Using a unique data set of children at-risk for HD (the Kids-HD study), markers of autonomic function (resting heart rate [rHR], blood pressure [BP], and core body temperature [CBT]) were compared between pre-symptomatic, gene-expanded children (psGE) and healthy developing children using mixed models analyses controlling for sex, age, and body mass index. Included participants had to be < 18 years old and be at least 10 years from their predicted motor diagnosis of HD. Using the Enroll-HD database, inverse-propensity score weighted, Cox Regression analyses investigated the effects of beta-blockers on the timing of motor diagnosis of presymptomatic, adult patients with HD. RESULTS/ANTICIPATED RESULTS: Compared to healthy controls, the psGE participants had significantly (p<0.05) higher mean rHR, systolic BP percentile, and CBT compared to the healthy controls (elevated by 4.01 bpm 0.19°C, and 5.96 percentile points, respectively, in the psGE group). Participants from Enroll-HD who were using a beta-blocker prior to motor diagnosis (n=65) demonstrated a significantly lower annualized risk of motor diagnosis [HR=0.56, p=0.03], compared to other participants with HD (n=1972). DISCUSSION/SIGNIFICANCE OF IMPACT: Sympathetic nervous system activity is elevated in patients with HD decades prior to their predicted motor diagnosis. Furthermore, modulation of the sympathetic nervous system with beta-blockers significantly lowers the annualized risk of motor diagnosis of HD.

3529

The main effects of threat appraisal on the well-being of African Americans living with HIV/AIDS in the Washington, D.C. metropolitan area, and the role of religious social support as a buffer

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OBJECTIVES/SPECIFIC AIMS: This study considered how threat appraisal and religious social support associate with subjective well-being and subjective experience of pain. Appraisal in this study refers to the individual's perception and interpretation of the

significance of learning of his/her HIV status. The study incorporated the stress-buffering model to propose that the beneficial effects of religious social support will modify the association between threat appraisal and well-being for PLHIV in a palliative care setting. Well-being was assessed both as the participant's subjective report of their well-being, and their subjective report of their experience with bodily pain. Participants' subjective report of well-being was hypothesized to be inversely associated with threat appraisal, and positively associated with religious social support. Subjective experience with bodily pain was hypothesized to be directly associated with threat appraisal, and inversely associated with religious social support. It was further also hypothesized that religious social support modifies the impact of threat-appraisal on well-being such that higher levels of religious social support reduce the observed effect of threat appraisal. METHODS/STUDY POPULATION: This was a cross-sectional study using baseline data from a randomized clinical trial–the FACE palliative care study in Washington, DC (FACE: FAmily CEntered Advance Care Planning). Participants were PLHIV who received their HIV care from 5 Washington, DC hospital-based HIV-specialty clinics. The FACE 3000 study paired participants into dyads of patient and surrogate decision-maker. The patient is a PLHIV for whom the advanced care planning care study is geared. The surrogate decision-maker is considered the patient's healthcare proxy who agrees to honor and advocate for the patient's treatment preferences, if the patient were unable to communicate with the health care team directly. Some surrogates are HIV positive, however due to their role as the patient's healthcare proxy, some of their surveys contain different content from those of the patient's. Potentially eligible participants in the FACE study received a secondary screening to determine eligibility to ensure competency to participate in end-of-life decision making. For this analysis, only the patient data was used. RESULTS/ANTICIPATED RESULTS: Subjective well-being showed significant associations with total threat appraisal, and four threat appraisal sub-constructs. Those with lower threat appraisals reported higher values of well-being compared to those with higher threat appraisals. Results from the regression analysis indicated that only one of the threat appraisal sub-constructs was significantly associated with a participant's subjective experience of pain. Overall, religious social support did not seem to buffer the effect of threat appraisal on well-being or subjective experience of pain. Findings from this study suggest that subjective well-being is associated with cognitive threat appraisal and this finding could assist PLHIV and their caregivers in understanding the coping processes of HIV-infected people. DISCUSSION/SIGNIFICANCE OF IMPACT: Due to stigmatization, an HIV diagnosis can influence a person's physical, behavioral, psychological, and even spiritual health (McIntosh & Rosselli, 2012). As a stressor, it can compromise immune function to worsen the effects of the infection, while mentally depressing an individual and contributing to adverse coping mechanisms (e.g. alcohol consumption, drug use) (McIntosh & Rosselli, 2012). How someone copes with stress (threat appraisal) may contribute to health-promoting or health-damaging behaviors (Fife, Scott, Fineberg, & Zwickl, 2008). Hence, the quality of life of those managing HIV/AIDS remains a pressing concern. Findings from this study suggest that Lazarus and Folkman's theoretical framework on the cognitive appraisal of threat could assist PLHIV and their caregivers in understanding the coping processes in PLHIV. For service providers, recognizing early threat appraisals and damaging coping mechanisms can be useful, especially for patients receiving an initial HIV diagnosis. For example, an

understanding of the patient's HIV appraisal can provide insight into the barriers to optimal care and adherence to ART and, potentially, help to reduce these barriers (Anderson, 1995). Furthermore, with the advancements of HIV medication, living with HIV has become a chronic condition, though as a stressor, it also poses long-term effects on the psychopathology of an individual living with HIV(McIntosh & Rosselli, 2012). Studies such as this study can help illuminate interventions aimed at reducing the psychological impact of HIV on a person's life. For example, support groups have been developed and structured to provide social support and have been demonstrated to increase the perceived well-being among PLHIV (Hyde, Appleby, Weiss, Bailey, & Morgan, 2005). This has further expanded into the consideration of online-based support groups for PLHIV (Blackstock, Shah, Haughton, & Horvath, 2015). In another light, but still within psychosocial interventions for managing HIV infection, mindfulness meditation has been used pervasively in studies assessing its use as an intervention to reduce depression and perceived stress in people living with HIV in order to increase both physical and psychological health (Moskowitz et al., 2015). Interventions, such as mindful meditation, have risen as we understand more about appraisal pathways and coping strategies (such as seeking social support), and how they influence both physiological and psychological responses (Moskowitz et al., 2015) to affect the health of a person. Therefore, longitudinal research aimed toward management of the psychological and social consequences of HIV is central to promoting an accurate understanding of the quality of life for PLWH (Anderson, 1995).

3258

The Relationship Between the Severity of Influenza-Related Illness and Timing of Seasonal Influenza Vaccination in Hospitalized Patients with Influenza

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OBJECTIVES/SPECIFIC AIMS: The overall goal of this project is to determine whether timing of seasonal influenza vaccination affects the severity of illness in vaccinated individuals who are hospitalized with influenza. This will be assessed with the following aims: 1. To determine whether differences in demographic and clinical characteristics exist among patients with short duration between seasonal influenza vaccination and influenza-related hospitalization and those with longer duration. 2. To determine whether time between seasonal influenza vaccination and hospitalization is associated with the duration of influenza-related hospitalization. 3. To determine whether time between seasonal influenza vaccination and hospitalization is associated with the rate of influenza-related ICU admission among patients hospitalized with influenza. 4. To determine whether time between seasonal influenza vaccination and hospitalization is associated with the rate of influenza-related death among adults hospitalized with influenza. METHODS/STUDY POPULATION: The Influenza Hospitalization Surveillance Network (FluSurv-NET) is a surveillance platform of influenza-related hospitalizations through the CDC Emerging Infections Program (EIP). FluSurv-NET conducts active surveillance for influenza-related hospitalizations of both children and