initiation. DISCUSSION/SIGNIFICANCE OF IMPACT: The immunological profile of children with B-ALL and factors influencing their susceptibility to infection are still incompletely understood. The benefits of IVIG are unknown. This study will provide evidence for IVIG prophylaxis recommendations in pediatric leukemia patients.

4355

Impact of Demographic & Racial Differences on DNA Repair Capacity in Lung Cancer

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OBJECTIVES/GOALS: Lung cancer is the leading cause of cancer-related mortality in the United States for both men and women. African Americans are disproportionately affected with lung cancer, having higher incidence and mortality rates compared to Caucasian men and women. African American smokers are diagnosed with lung cancer at a lower age with lower cumulative smoking history. Differences in socioeconomic and environmental factors likely contribute to lung cancer disparities, but less is known about acquired biologic alterations that can promote initiation and progression of lung cancer, particularly in African Americans. This is of interest because there may be other biological, genetic, or environmental factors contributing to lung cancer outcomes as it relates to differences in gender and race. One potential biologic variable may be in the DNA repair capacity (DRC), which describes a cell's ability to repair damage to DNA caused by carcinogens, oxidants, and radiation. Altered DNA repair is a hallmark of cancer, leading to mutations and malignant transformation. We hypothesize that DRC is decreased in African Americans with lung cancer compared to Caucasian Americans with lung cancer, contributing to the disparity that exists in this racial group. We will 1) perform a retrospective chart review to determine demographic differences between African Americans and Caucasians at three central Indiana hospitals and 2) determine the impact of race and lung cancer on DRC amongst African Americans and Caucasians with and without lung cancer. METHODS/STUDY POPULATION: Lung cancer patients are identified in 3 central Indiana hospitals with different payer source and patient populations using ICD codes. Collected demographics include age, gender, pack-years, lung cancer histology, treatment, and mortality. DRC is measured by host-cell reactivation (non-homologous end-joining and nucleotide excision repair pathways) by flow-cytometry. Measurement of DRC is performed on PBMCs obtained from 120 patients (male and female, African Americans and Caucasians with and without lung cancer). Correlation of DRC and lung cancer will be determined by comparing lung cancer diagnosis to quartile DRC, and adjusted for confounders (measured demographics). Correlative measures will include measures of DNA damage and genomic instability. RESULTS/ANTICIPATED RESULTS: 3450 lung cancer patients were diagnosed with lung cancer at Indiana University Hospital between 1/1/2000 – 5/31/2015. Of these, 48.2% were female and 92.7% smokers. African Americans, Caucasians and Other ethnicities represented 12%, 86% and 2%, respectively. Of smokers, 11.4% were African American. The primary payer source was Federal/Medicare. Retrospective review of lung cancer patients from two additional health systems (county and VA hospitals) will be performed as above with outcomes measured. DRC and additional correlative measures will be performed as in Methods. DISCUSSION/SIGNIFICANCE OF IMPACT: If present, altered DRC in African Americans compared to Caucasians may contribute to the disproportional impact of lung cancer on African Americans. If DRC is decreased in African Americans with lung cancer, future studies will focus on identifying potential genetic, epigenetic and environmental causes for this decrease.

4020

Impact of Patients' Health Literacy Level on Patients' Health Outcomes

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OBJECTIVES/GOALS: The objective of this study is to examine the relationship between gastro-intestinal (GI) patients' health literacy levels and patients' health outcomes (length of stay, readmission, complication). METHODS/STUDY POPULATION: A research team at the University of Alabama at Birmingham (UAB) 's Gastro-Intestinal (GI) surgical department collected inpatient GI patients' health literacy data by distributing the Brief Health Literacy Screen (BRIEF) survey to patients are about to be discharged. Patients' health outcomes data were gathered through Business Objects, an online platform that allows physicians and researchers to access and gather patients' medical information with an IRB approval. After accounting for necessary control variables, logistic regression and multiple linear regression models will be run to assess whether there is a significant relationship between patients' health literacy levels and patients' health outcomes. RESULTS/ANTICIPATED RESULTS: Three specific hypotheses are proposed in this study. H1: GI patients' health literacy levels will be negatively associated with their lengths of stay H2: GI patients' health literacy levels will be negatively associated with their readmission status to the hospital H3: GI patients' health literacy levels will be negatively associated with their complication status to the hospital DISCUSSION/SIGNIFICANCE OF IMPACT: This study allows us to further our understanding of patients' health literacy level and its' relationship with important health outcomes. By looking at a variety of diverse health outcomes, the impact of a patients' health literacy level on that patients' health outcomes will be observed more clearly.

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Improving Data Capacity and Predictive Capability of NSQIP-P Using Designed Sampling from Databases

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OBJECTIVES/GOALS: Designed sampling from databases (DSD) methods have been used to cross-check electronic medical records for errors, structure study design, and, we hypothesize, can be used to make data collection for surgical quality metrics more efficient, particularly within national databases. We plan to apply statistical and DSD methods to accomplish the following aims:

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