

estimate adjusted odds ratios (OR) and 95% confidence intervals (CI) after adjustment for age, sex and HIV status as potential confounders. RESULTS/ANTICIPATED RESULTS: Among 466 HHCs, the median age was 29 years (IQR 23-38), 58.8% were female, 3.4% were HIV-positive, and median BMI was 20.9 kg/m<sup>2</sup> (IQR 18.9-23.8). Overall, 329 HHCs (70.6%) had LTBI, 26 (5.6%) had DM and 73 (15.7%) had pre-DM. Compared to HHC without DM, the prevalence of LTBI was higher in those with pre-DM (68.9% vs. 72.6%; OR 1.19, 95% CI 0.69-2.13) and those with DM (88.5%; OR 3.45, 95% CI 1.17-14.77). In multivariable analysis, there was a trend towards increased LTBI risk among HHCs with DM vs. without DM (OR 2.16, 95% CI 0.67-9.70) but the difference was not statistically significant. Among HHCs with LTBI, the median IFN- $\gamma$  response to TB1 antigen was modestly greater in those with DM (5.3 IU/mL; IQR 3.0-7.8) and pre-DM (5.4 IU/mL; IQR 2.0-8.4) compared to HHCs without DM (4.3 IU/mL; IQR 1.4-7.7). DISCUSSION/SIGNIFICANCE OF FINDINGS: Our results suggest that DM may increase the risk of LTBI among HHCs recently exposed to active TB. Among those with LTBI, increased IFN- $\gamma$  antigen response in the presence of DM and pre-DM may indicate an exaggerated but ineffectual response to TB. Further investigation is needed to assess how dysglycemia impacts susceptibility to *M. tuberculosis*.

67863

### Insulin use and depigmentation: a survey of real-world evidence

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ABSTRACT IMPACT: Long-acting insulin containing protamine is more likely to be associated with skin depigmentation. OBJECTIVES/GOALS: An acquired disorder, skin depigmentation was found to be significantly correlated with diabetes. While a recent meta-analysis pointed at a possible similar pathogenesis, the possibility of vitiligo occurring as a drug-induced disease was never explored. This study aimed at elucidating whether utilization of specific insulins may play a role. METHODS/STUDY POPULATION: Records from the Medical Panels Expenditure Survey (MEPS) database made available by the Agency for Healthcare Research and Quality were used to identify all injectable insulin users (n=8867). ICD-9/10 codes were abstracted from the medical conditions files for all the subjects reporting any type of injectable insulin use (1996-2017). Skin depigmentation codes identified in our dataset were 709 and L81. Insulins were categorized based on duration of action, short-acting (SA), intermediate-acting (IA), and long-acting (LA), as well as based on formulation ingredients (zinc, protamine-zinc, other), and insulin combination (SA with or without IA/LA containing or not protamine-zinc). The association between skin depigmentation occurrence and insulin type and/or category was assessed by Fisher's exact test. RESULTS/ANTICIPATED RESULTS: A total of 225 out of 8867 individuals were diagnosed with skin depigmentation. Incidence of skin depigmentation was 2.25% in SA users (n1=3606, p=0.355), 2.24% in LA users (n2=3910, p=0.337), and 2.39% in IA users (n3=4015, p=0.062). Occurrence of skin depigmentation was similar between users of insulin mono- or combo therapy (p=0.758). Interestingly, among IA insulins, insulin protamine-zinc insulin (n4=3992) distinguished as being mainly responsible for the association with the occurrence of skin depigmentation (p=0.062), whereas insulin zinc was not (n5=37, p=1.000). The highest skin depigmentation incidence was observed among Pacific Islanders (2.66%, p=0.110). Males distinguished by a skin depigmentation incidence of 2.34% vs. 1.91% in females (p=0.086). DISCUSSION/

SIGNIFICANCE OF FINDINGS: We report that presence of protamine-zinc may play a role in the development of skin depigmentation. It is uncertain whether this risk may be shared equally by insulin users diagnosed with type 1 and type 2 diabetes. Of note, we observed a higher skin depigmentation incidence than that reported by community- (0.2%) or hospital-based (1.8%) studies.

68127

### High Sensitivity Troponins Predicts Mortality in Patients Who Present to the ED with Severe Sepsis or Septic Shock\*

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ABSTRACT IMPACT: Our may suggest that delta hsTrop could be of prognostic value in patients with sepsis. OBJECTIVES/GOALS: - METHODS/STUDY POPULATION: We analyzed data of those presenting to the ED over an 18-month period with sepsis and at least one episode of hypotension after 1 liter of IV fluids. We performed a retrospective analysis using a cohort derived from modified inclusion and exclusion criteria from the CLOVERS study. The outcomes of patients found to have a delta (at least 6 pg/dL) in high sensitivity troponin T were compared to patients who did not have a delta or have a troponin level measured. We examined demographic and treatment characteristics of this cohort and the incidence of adverse outcomes were determined. We used multivariable logistic regression analysis to test the association of hsTrop and mortality. RESULTS/ANTICIPATED RESULTS: 778 patients met criteria to be included in the cohort. 279 patients had a change in high sensitivity troponins, an incidence of 35.9%. Patients with a delta were more likely to be older, male, and have a higher Charlson index than patients without a delta or those that had no troponin measured. They were also more likely to have a history of chronic lung disease, heart failure and hypertension. Change in high sensitivity troponins were associated with higher in-hospital mortality. When adjusted for age, gender, and Charlson Index, the association between a positive delta troponin and mortality remained statistically significant. DISCUSSION/SIGNIFICANCE OF FINDINGS: In patients with severe sepsis and septic shock, the presence of a positive or negative delta hsTrop at 2 hours is associated with increased mortality. Measurement of high sensitivity troponin early in the patient's hospital course may have prognostic utility.

75561

### Association of childhood hypertension with early adulthood obesity and hypertension\*

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ABSTRACT IMPACT: This study establishes the association between childhood hypertension and health outcomes in early adulthood, identifying the need to understand blood pressure during early life for primary prevention of hypertension and cardiovascular disease. OBJECTIVES/GOALS: There is evidence that blood pressure level in early life can influence hypertension and other cardiovascular risk factors later in life. We examined whether hypertension before the age of 18 is associated with higher odds of obesity and hypertension after the age of 18. METHODS/STUDY POPULATION: We studied 19,367

children and adolescents from the Vanderbilt University Medical Center's Synthetic Derivative, a de-identified version of the electronic medical record. Childhood hypertension was defined as systolic blood pressure (SBP)  $\geq 130$  mmHg or diastolic blood pressure (DBP)  $\geq 80$  mmHg at three or more outpatient visits before the age of 18. Obesity and hypertension in early adulthood were the primary outcomes. Obesity was defined as being above normal weight for adulthood height at age 30 based on the NIH's body mass index tables. Hypertension was defined as SBP  $\geq 130$  mmHg or DBP  $\geq 80$  mmHg at three or more outpatient visits after the age of 18. Odds ratios and 95% confidence intervals (CIs) were computed from logistic regression models adjusted for demographics, medication use, and childhood weight. RESULTS/ANTICIPATED RESULTS: Most subjects were female (63%) and white (80%). During childhood, 17% of participants had hypertension. Approximately 58% of this group were obese at age 30, and 38% had hypertension as adults. Compared to females with no childhood hypertension, females with childhood hypertension had 1.35 times higher odds of being obese at age 30 (95% CI: 1.15, 1.58) and 3.56 times higher odds of having hypertension over the age of 18 (95% CI: 3.09, 4.09). Males with childhood hypertension, compared to males without, had 1.28 times higher odds of being obese at age 30 (95% CI: 1.08, 1.52) and 2.74 times higher odds of having hypertension over the age of 18 (95% CI: 2.35, 3.20). Associations between childhood hypertension, early adulthood obesity, and hypertension significantly differed by gender (p-for-interaction for both:  $<0.01$ ). DISCUSSION/SIGNIFICANCE OF FINDINGS: Childhood hypertension is associated with obesity and hypertension in early adulthood. Understanding blood pressure levels in childhood and adolescence may help target efforts to reduce early adulthood cardiovascular risk factors.

76865

### Clinical Outcomes of Chronic Myelomonocytic Leukemia in the VA Healthcare System

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ABSTRACT IMPACT: Through a comprehensive analysis of patterns of care and outcomes in Veterans with chronic myelomonocytic leukemia, we will identify Veteran-specific determinants of survival that will allow for more personalized decision-making in this underserved population. OBJECTIVES/GOALS: Little is known about outcomes of Veterans with chronic myelomonocytic leukemia (CMML), a malignancy with high morbidity and mortality. In this study, we will describe patterns of care, identify factors that impact survival, and compare outcomes in this cohort to those of the civilian population. METHODS/STUDY POPULATION: We will conduct a comprehensive retrospective review of approximately 1,000 Veterans with CMML. We will construct a database of demographics, clinical characteristics, disease characteristics, treatment regimens, and outcomes in this cohort. Adult Veterans with a diagnosis of CMML determined by ICD-O-3 coding who were treated through the VA after 1990 and have sufficient electronic health data will be included in this study. Veterans receiving the majority of their care for CMML at non-VA hospitals or clinics will be excluded. Data on veterans will be obtained and validated from VA clinical databases and chart review. Data on the civilian population will be obtained from SEER registries. RESULTS/ANTICIPATED RESULTS: We will first describe the baseline patient characteristics and distribution of disease in this cohort and illustrate the landscape

of their CMML care. We will subsequently describe the impact of baseline patient characteristics on pathological features of disease, patterns of care, response to therapy, and survival. We anticipate we will identify several Veteran-specific factors that influence treatment and are prognostic or predictive of survival. After drawing conclusions about the Veteran cohort alone, we will compare baseline characteristics and survival outcomes between the Veteran and civilian populations. We predict we will identify significant differences between these two cohorts. DISCUSSION/SIGNIFICANCE OF FINDINGS: This study will help inform Veteran care by identifying clinical features and patient characteristics that are prognostic or predictive of survival. This will open the door for more accurate risk stratification and personalized treatment that could improve outcomes in this underserved population.

84617

### Prevalence and Co-prevalence of Comorbidities among Patients with Type 2 Diabetes Mellitus living in Puerto Rico, USA

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ABSTRACT IMPACT: Summarize the burden of diabetes comorbidities and its impact in healthcare utilization in Puerto Rico OBJECTIVES/GOALS: To estimate the prevalence of common comorbidities and describe the healthcare utilization patterns in patients with type 2 diabetes mellitus (T2DM) in Puerto Rico. METHODS/STUDY POPULATION: This is a descriptive study using healthcare claims data from patients with T2DM (based on ICD-9 diagnosis code) from most public and private healthcare insurance companies providing services in Puerto Rico in 2013 (representing more than 90% of insured population). Descriptive analyses by age, sex, type of insurance, health region, and type of medical encounter were done using frequency and percent for categorical data or means or median (with corresponding standard deviation or interquartile range) for continuous variables RESULTS/ANTICIPATED RESULTS: A total of 3,100,636 claims were identified from 485,866 adult patients with T2DM. Most patients were women (276,400; 57%), older than 65 years (235,390; 48%), from the Puerto Rico health regions of Caguas (79,604; 16%), Metro (66,280; 14%), or Bayamon (62,673; 13%) with private health insurance (371,806; 77%). The number of claims per patient ranged from 1 to 339. A mean of 6.3 claims (SD  $\pm 9.99$ ) and a median of 3 claims (Q1 1- Q3 8) per subject were identified. Most (74%) were related to the diagnosis of diabetes (1,829,2015; 59%) or to cardiovascular diseases (458,219; 15%) and associated to outpatient services (2,722,727; 88%). The most prevalent comorbidities were hypertension (235,277; 48%), hyperlipidemia (197,449; 41%), neuropathy (100,471; 21%), renal disease (71,517; 15%), and retinopathy (61,837; 13%) DISCUSSION/SIGNIFICANCE OF FINDINGS: A high prevalence of comorbidities and use of healthcare services were identified in patients with T2DM, especially in older adults. Most comorbidities were due to diabetes-related conditions, highlighting the importance of early diagnosis and adequate management of T2DM patients to avoid preventable burden to the patient and the healthcare system