the age range for HPV vaccination were willing to get it. Also, there was a lower prevalence of cervical cancer screening in females 21-29 years old when compared with 30-45 years old. In conclusion, there is a need for more education about HPV associated cancers and vaccine.

53034

Melatonin use and occurrence of respiratory illnesses

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ABSTRACT IMPACT: Melatonin use could alleviate virus-induced respiratory illnesses. OBJECTIVES/GOALS: Melatonin was identified as a potential repurposable drug in the fight against SARS Cov-2. Its ability to attenuate some virus inoculation effects raises the question whether melatonin use could alleviate virus-induced respiratory illness. Here we evaluated the occurrence of respiratory conditions in melatonin users and non-users surveyed. 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 evaluate whether melatonin may be associated with reduced viral respiratory disease burden. First, all subjects reporting melatonin use (1996-2017) were collected along with records for all subjects reporting respiratory diseases as identified by consolidated ICD-9/10 codes. Second, all diagnosis codes were retrieved for all individuals identified in the first step. In total there were 201,490 occurrences of the specified conditions among 180,468 unique individuals. The relative risk of specific respiratory disease occurrence was computed for melatonin users and non-users. Population estimates for melatonin use were also determined. RESULTS/ANTICIPATED RESULTS: Among 221 melatonin users, 132 had at least one respiratory illness. Among the 180,468 total subjects reporting at least one respiratory condition, melatonin use was associated with a lower rate of the common cold, pharyngitis, strep throat, scarlet fever, and sinusitis. Furthermore, melatonin was associated with a significantly reduced risk of common cold (RR 0.760, CI 0.587-0.985) and sinusitis (RR 0.407, CI 0.186-0.890). Due to low subject counts, the reduced risk observed for scarlet fever and strep throat was not considered significant. Melatonin users had a higher relative risk of allergic rhinitis (RR 1.393, CI 1.043-1.862) and asthma (RR 2.166, CI 1.672-2.806), probably due to melatonin active prescribing in these patients as sleep aid. DISCUSSION/SIGNIFICANCE OF FINDINGS: Although melatonin showed a lower relative risk of certain viral respiratory conditions, the low melatonin user numbers and their heterogeneous distribution over the time interval led to highly variable population estimates. Yet, our data suggests that melatonin may alleviate viral respiratory illness and deserves further investigation.

56600

Statin use and medical expenditure in patients with Parkinson's disease

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ABSTRACT IMPACT: Despite their clinical benefits reported in patients with Parkinson's, statin use is not associated with cost savings. OBJECTIVES/GOALS: Statins have unique lipid-lowering, anti-inflammatory and anti-oxidant benefits. Their pleiotropic benefits were shown to decrease risk of occurrene and progression of Parkinson's disease (PD). In this study we explored whether or not statin use reflects medical or prescription cost savings. 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 PD subjects (n=613). Demographics and PD ICD9/10 codes, 332/G20, were abstracted from the medical condition files for all the subjects (1996-2018). Prescribed cholesterol drugs were identified based on generic and brand names following a manual review to detect any misspellings. Total medical expenses and prescription expenses were abstracted for all identified PD subjects. Subject were surveyed for two consecutive years, thus expenses were assessed for each of the two surveyed years. Costs were adjusted for inflation and expressed in 2018 dollars. The relationship between cholesterol drug use, cost and age or gender was evaluated by Fisher's exact test. RESULTS/ANTICIPATED RESULTS: Out of the 613 PD subjects identified, 421 received no cholesterol management, 15 received non-statins, 153 received a statin and 24 received a statin-based combo therapy. While the medical expenses in the general population receiving a statin are roughly three times higher than non-statin users, no significant cost difference was noticed between PD subjects receiving or not statins. However, after adjusting for age and gender, receiving statin vs. non-statin vs combo vs none was significantly associated with total expense (p=0.017) suggesting that cholesterol management decision may play a significant role. DISCUSSION/SIGNIFICANCE OF FINDINGS: Selection of specific cholesterol treatment may play a considerable role in the overall PD expenditure. Duration of statin treatment and type of statin are expected to play a role.

61586

Impact of Diabetes and Pre-diabetes on Prevalence of Infection with Mycobacterium tuberculosis among Household Contacts of Active Tuberculosis Cases in Ethiopia*

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ABSTRACT IMPACT: This work examines the association between diabetes mellitus and latent tuberculosis infection among a cohort of household contacts exposed to active tuberculosis in Ethiopia, focusing attention on the need for further translational research to determine the mechanisms of susceptibility to Mycobacterium tuberculosis infection among individuals with diabetes and pre-diabetes. OBJECTIVES/GOALS: Diabetes mellitus (DM) is an established risk factor for active TB disease, but there is limited understanding of the relationship of DM and latent tuberculosis (LTBI). We sought to determine the relationship between DM or pre-DM with LTBI among household or close contacts (HHCs) of active TB cases in Ethiopia. METHODS/STUDY POPULATION: We conducted a cross-sectional study of the HHCs of index active TB cases enrolled in an ongoing TB Research Unit (TBRU) study in Addis Ababa, Ethiopia. HHCs of individuals with laboratory-confirmed TB had QuantiFERON ®-TB Gold Plus (QFT) and glycated hemoglobin (HbA1c) tests performed. LTBI was defined as a positive QFT and lack of symptoms. HbA1C results were used to define no DM (HbA1c <5.7), pre-DM (HbA1c 5.7-6.5%), and DM (HbA1c >6.5% or prior history of diabetes). Logistic regression was used to

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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^2 (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-? 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-? 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

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