SIGNIFICANCE OF IMPACT: Patient uptake of LEAPED was high, which suggests that patient-report is a feasible method of evaluating diagnostic decision making and delivery to patients and yields insightful information beyond administrative data. The next steps are to validate the accuracy of patient-reported diagnostic error by comparing with administrative data.

4077

Listening with the HEAR-QL: Quality of Life in Children with Hearing Loss

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OBJECTIVES/GOALS: This study evaluates the utility of self-reported quality of life measure in children with hearing loss. We will compare self-reported HEAR-QL scores with parent-reported HEAR-QL scores. We will then test the relationship between HEAR-QL scores and scores on a standardized assessment of cognition, the NIH Cognition Battery. METHODS/STUDY POPULATION: We will administer the HEAR-QL questionnaire to children with hearing loss and their parents. We will then administer the NIH Cognition Battery to the child. We will include in our population children ages 7 to 14 with hearing loss of any severity or side. We will exclude those with intellectual disability, disorders of speech or language, or those who would be unable to complete the questionnaires for any reason. Children will be recruited from Otolaryngology clinics at St. Louis Children's Hospital based on ICD diagnosis of sensorineural hearing loss between 01/2015 – 03/2020. RESULTS/ANTICIPATED RESULTS: We will aim to recruit 44 patients in total, which is the sample size needed to detect a moderate correlation ($r = 0.4$) with a 1-sided $\alpha = 0.05$ and 1-$\beta = 0.8$. HEAR-QL scores and NIH Cognition Battery scores will be reported using descriptive statistics. Linear regression as well as correlation analysis between HEAR-QL scores and cognitive testing scores will be performed using a 1-sided $\alpha = 0.05$, with 1-$\beta = 0.8$. If recruitment is sufficient, we will adjust for demographics that are significantly correlated with the outcome on multivariate analysis. Finally, we will test for agreement between parent report and child report by calculating a Kappa statistic. DISCUSSION/SIGNIFICANCE OF IMPACT: There is little clarity on the necessity of amplification in children with hearing loss, yet the child's perspective is not routinely assessed in clinical practice. This study employs self-report in a pediatric population with hearing loss to find out if children provide new and reliable information.

4221

Lower Serum TWEAK Concentration is a Biomarker for Mortality in Community Acquired Pneumonia

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OBJECTIVES/GOALS: To determine the relationship among serum concentration of tumor necrosis factor (TNF)-like weak inducer of apoptosis (TWEAK) and mortality in community-acquired pneumonia (CAP) patients. METHODS/STUDY POPULATION: This is a multicenter 2-year cohort study in Spain, designed to better understand the role of sTWEAK concentrations in CAP patients. CAP patients were prospectively enrolled in two University hospitals and sTWEAK was measured within the first 24 hours of ICU admission. Samples were collected and stored for laboratory analyses. To detect sTWEAK in human samples, we used a commercially available ELISA kit following manufacturer's instructions. Demographic patients' characteristics and ICU mortality were prospectively collected. Descriptive statistics and logistical regressions were used to assess the proposed aims. RESULTS/ANTICIPATED RESULTS: A total of forty-three patients were included in the study (10 healthy users, 10 uninfected controls and 23 CAP patients). In comparison to healthy volunteers, patients admitted to the hospital (both, infected and non-infected) had lower level of sTWEAK. During hospital admission, 7 (17%) patients died. Patients whom died during ICU stay due to CAP, had significantly lower levels of sTWEAK when comparing with patients whom survived (Median [IQR]; 509.35 [357.49, 953.92] Vs 1103.03 [716.93, 1663.16]; $p = 0.015$). In contrast, patients that developed shock did not have different concentrations of sTWEAK (Median [IQR]; 1008.04 [531.87, 1390.80] Vs 1062.29 [575.24, 1598.83], $p = 0.84$). DISCUSSION/SIGNIFICANCE OF IMPACT: Community-acquired pneumonia (CAP) is the first cause of death in underdeveloped countries. CAP is a pulmonary infection that creates a proinflammatory environment not just locally but also systemically, secondary to upregulation of molecular cascades with a wide variety of proteins being released perpetuating this inflammation and tissue damage. Several of these molecules have been described and linked to a greater risk of inhospital complications, longer length of hospital stay and mortality. TNF-like weak inducer of apoptosis (TWEAK) is a member of the TNF-alpha superfamily, involved in immune response, cell growth, angiogenesis, NF-kB activation and apoptosis induction in tumor cells. It is known that serum-TWEAK plays a role in inflammatory processes, however, its behavior is unknown in patients with CAP. Therefore, this study aims to identify whether there is a relationship between serum concentration of TWEAK and prognosis in CAP patients. To our knowledge, this is the first study to shown that concentration of sTWEAK within the first 24 hours of ICU admission is lower in patients with CAP. Moreover, patients whom died during ICU admission due to CAP, have lower sTWEAK levels. This biomarker may identify patients at higher risk of dying due to CAP and may represent severe CAP. However, further studies are needed to confirm these findings.

4379

MARCKS protein is altered in naturally occurring model of asthma in horses

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OBJECTIVES/GOALS: Asthma is a significant health concern that affects people of all ages worldwide. EAS demonstrates many of the pathophysiological characteristics of nonatopic human asthma, which has led EAS to be used as naturally occurring model. Previous work from our lab determined that MARCKS (Myristoylated Alanine Rich C Kinase Substrate) protein is an essential regulator of cellular inflammatory functions. In the current study, we hypothesized that

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