reduces the activity of glutathione peroxidase 1 (GPX1), is associated with brain OS in patients with ME/CFS. METHODS/STUDY POPULATION: Study population: The study enrolled 20 patients with ME/CFS diagnosed according to Canadian Consensus Criteria, and 11 healthy control (HC) subjects. Genotyping: DNA was extracted from whole blood samples, amplified by PCR, and purified. Sanger sequencing was used for genotyping. 1H MRS: Proton magnetic resonance spectroscopy (1H MRS) was used to measure levels of glutathione (GSH)â€" a primary tissue antioxidant and OS markerâ€" in a 3x3x2 cm3 occipital cortex (OCC) voxel. GSH spectra were recorded in 15 minutes with the standard J-editing technique. The resulting GSH peak area was normalized to tissue water level in the voxel. Statistical Analysis: T-tests were used to compare OCC GSH levels between ME/CFS and HC groups, and between the study's genotype groups (group 1: CC, group 2: combined TC and TT). RESULTS/ANTICIPATED RESULTS: Clinical characteristics: ME/CFS and HC groups were comparable on age and BMI but not on sex ($p = 0.038$). Genotype frequencies: Genotype frequencies in the ME/CFS group were 0.55 (CC), 0.25 (TC) and 0.2 (TT); and 0.636 (CC), 0.364 (TC), and 0 (TT) in the HC group. GSH levels: There was a trend-level lower mean OCC GSH in ME/CFS than in HC (0.0015 vs 0.0017; $p = 0.076$). GSH levels by genotype group interaction: Within the ME/CFS group but not in the combined ME/CFS and HC group or HC group alone, GSH levels were lower in the TC and TT genotypes than in CC genotypes (0.00143 vs 0.00164; $p = 0.018$). DISCUSSION/SIGNIFICANCE: This study found that the presence of a C>T SNP in GPX1 is associated with lower mean GSH levels and, hence, brain oxidative stress, in ME/CFS patients. If validated in a larger cohort, this finding may support targeted antioxidant therapy based on their genotype as a potentially effective treatment for patients with ME/CFS.

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Financial Toxicity in Dementia Caregiving

Danielle M. Hart, Brandon Leggins, Clara Sanches, Winston Chiong
University of California, San Francisco

OBJECTIVES/GOALS: Financial toxicity describes the adverse effects of medical expenses on financial security and health related quality of life. Though dementia caregiving carries serious costs, financial toxicity has not been studied in this context. Here we assess the prevalence of financial toxicity in dementia caregiving and its sociodemographic correlates. METHODS/STUDY POPULATION: We utilized the COmprehensive Score for financial Toxicity (COST)â€" 12-item questionnaire validated to quantify financial toxicity in patients and their caregiversâ€" to conduct a nationally representative survey of 317 US dementia caregivers, oversampling non-Hispanic Black ($n = 75$) and Hispanic ($n = 61$) caregivers. Participants were required to be currently providing unpaid care to someone 50 years or older with dementia. Financial toxicity was defined as COST 0 & RESULTS/ANTICIPATED RESULTS: COST scores ranged between 0 and 44, with a survey-weighted mean of 24.57 and standard deviation of 9.8. Weighted analysis revealed 52.7% of American dementia caregivers experience some degree of financial toxicity. Of those who experience financial toxicity, 73.1% are classified as mild, 25.7% as moderate, and 1.2% as severe. Financial toxicity was identified in 69.5% of non-Hispanic Black, 54.1% of Hispanic, and 42.3% of non-Hispanic White caregivers, with non-Hispanic Black caregivers significantly more likely to experience financial toxicity compared to their non-Hispanic White counterparts ($p = 0.017$). DISCUSSION/SIGNIFICANCE: Most US dementia caregivers experience financial toxicity, though prevalence varies significantly by caregiver race. Discerning the pervasiveness of financial toxicity in this population and significant correlates will inform the development and expedient delivery of resources for patients and families.

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Impact of COVID-19 Pandemic on Oral Cleft Services in Puerto Rico

Dr. Yinayra Victoria, Dr. Carmen Buxo, Dr. Augusto Elias, Dr. Natalio Debs
University of Puerto Rico

OBJECTIVES/GOALS: Evaluate the impact of COVID-19 on oral clefts services including surgical and dental treatments in Puerto Rico. METHODS/STUDY POPULATION: This Observational retrospective cohort study will consider patients 0-21 y/o with CL/P that visited the UPR school of Dental Medicine, Pediatric University Hospital Dr. Antonio Ortiz and ongoing case-control research project Face-Genes. Records to be used are classified as follow: Pandemic (March 15, 2020 to March 15 2022) Pre-pandemic (March 15, 2015 to March 15, 2017) Power analysis (power=0.80 alpha=0.05) will be calculated. Unavailable and incomplete medical records and those that did not attended study clinic during study period will be excluded. Data extraction instrument will be based on previous published study. Descriptive statistics, Chi-square, Odds Ratios at 95% confidence intervals and multiple logistic regression will be estimated. RESULTS/ANTICIPATED RESULTS: We hypothesize that surgical and dental services in Puerto Rico will be adversely impacted because of COVID-19 pandemic. DISCUSSION/SIGNIFICANCE: CL/P are common congenital diseases that require early interdisciplinary attention. Lack of timely care as well as surgery and treatment delays, could be associated with poorer prognosis, increased morbidity and mortality. If there is high risk of dh services during emergency situations, our findings will help to allocate the available resources

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Incidence and Risk Factors for Comorbidities Following COVID-19 Disease in People Living with HIV

Cecilia Castellano, Caitlin Moran, Minh Nguyen, Cecile Lahiri, Emory University

OBJECTIVES/GOALS: COVID-19 disproportionately affects patients with prior health conditions and those living at a lower socioeconomic status. Persons living with HIV (PLWH) are infected with SARS-CoV-2 at a higher rate than seronegative patients. Risk factors and incidence of post-COVID-19 comorbidities in PLWH, specifically, are still unknown METHODS/STUDY POPULATION: We will study PLWH enrolled in the Emory Centers for AIDS Research (CFAR) Registry who receive care at the Grady Ponce de Leon Center in Atlanta, Georgia to 1) investigate the incidence of, and 2) identify risk factors that predispose PLWH to post-COVID-19 comorbidities. All PLWH with documented COVID-19 (by positive SARS-CoV-2 PCR or antigen test) between March 1, 2020, and September 30, 2021, with a clinic visit within 12 months will be included. We will identify comorbidities using problem list diagnoses and ICD9/10 codes. With a predicted sample size of 395, we will use a Cox proportional hazards model for time-to-detection of comorbidity, and bivariate and

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