insurance, access to care, ethnic enclave, historical segregation, etc.) of cases and controls to identify, characterize, and compare geographic "hotspot" neighborhoods of mE-GC. We hypothesize younger Hispanic and Asian patients are at higher risk of H.pylori associated mGC. RESULTS/ANTICIPATED RESULTS: From 2000-2022, 339 patients (mE-GC n = 113; mO-GC n=226) were treated at NCCC. We will have characterized clinical and pathological features of mE-GC vs mO-GC. We determined the proportion of H. pylori associated mE-GC vs mO-GC. We will have established the geographical distribution of patients with mE-GC vs mO-GC to identify high-risk neighborhoods. We will link neighborhood risk factors such as food scarcity, poverty, health care access, ethnic enclaves, to the distinct clinical and pathological features of mE-GC, including H. pylori status. Descriptive statistics, chi-square, t-tests, and multivariable regression will be used to compare mE-GC to mO-GC. After controlling for underlying demographics and tumor features, we anticipate clusters of mE-GC and mO-GC in areas of historical racial segregation. DISCUSSION/SIGNIFICANCE: Linking neighborhood and individual risk factors for mE-GC will inform early detection and prevention efforts for vulnerable individuals in high-risk neighborhoods. Building community partnerships within these neighborhoods is essential for developing interventions targeting H. pylori treatment to reduce health disparities in mE-GC.

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Impact of ACTIV-6 treatment on PROMIS-29 at 7, 14, 28, and 90 days

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OBJECTIVES/GOALS: As mortality and morbidity from acute COVID-19 decline, the impact of COVID-19 on short- and long-term quality of life (QoL) becomes critical to address. We assessed the impact of re-purposed COVID-19 therapies on QoL as a secondary outcome measure in ACTIV-6, a decentralized platform trial. METHODS/STUDY POPULATION: Adults aged ≥30 with mild-to-moderate COVID-19 enroll in ACTIV-6 online or through a study site. Patients are randomized to a medication of interest or placebo. Medications are mailed and symptoms are tracked using electronic diaries. QoL is measured#_msocom_1 using the PROMIS-29 questionnaire. Adjusted Bayesian logistic regression models are used to measure effects of treatment on the seven PROMIS-29 QoL domains at days 7, 14, 28#_msocom_2 and 90. Covariates are treatment, age, gender, symptom duration and severity, vaccination status, geographic region, call center#_msocom_3#_msocom_4, and calendar time. Treatment effects are described using ORs, 95% credible intervals, and posterior probabilities of efficacy, P(eff). RESULTS/ANTICIPATED RESULTS: There are 5,362 patients included, representing four of the study arms in ACTIV-6. We report results where P(eff)<0.025 and P(eff)>0.975 in the table below. Table 1. Scale Day: OR* (95% credible interval, P(eff)) Therapy Physical Anxiety Depression Fatigue Sleep Social Pain Ivermectin 400 — Ivermectin 600 D7: 0.77 (0.61-0.96, 0.01) D14: 0.65 (0.49-0.85, <0.01) D28: 0.69 (0.52-0.92, 0.01) — D7: 0.79 (0.64-0.97, 0.01) — D14 0.78 (0.60-1.00, 0.02) D28: 0.66 (0.50-0.87, <0.01) Fluticasone - D14: 0.77 (0.60-0.99, 0.02) — D7: 0.76 (0.62-0.93, <0.01) D90: 0.79 (0.64-0.98, 0.01) — D7: 0.74 (0.59-0.93, 0.01) Fluvoxamine D7: 0.66 (0.51-0.84, 0.01) — D28: 1.38 (1.02, 1.85, 0.98) D7: 0.78 (0.63-0.97, 0.01) D7: 0.77 (0.62-0.95, 0.01) — *OR > 1 favors active intervention DISCUSSION/SIGNIFICANCE: Results suggest fluvoxamine may improve depression scores by day 28, while placebo is favored in several other scales across treatments. Differences between treatment and placebo are not seen at most other timepoints. This trial is ongoing and future work will include results from additional ACTIV-6 study arms.

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Utilizing a Digital Phenotype for Metabolic Syndrome to Elucidate Risk Profiles for Neurocognitive Disease: An Electronic Medical Record Study

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OBJECTIVES/GOALS: Metabolic syndrome (MetS), defined as a cluster of cardiometabolic disease risk factors, is seldom coded using the ICD-10 system in electronic medical records (EMR). The goal of this study was to use EMR to construct MetS with a digital phenotype to amplify the pool of patients available to assess risk for neurocognitive disease in this population. METHODS/STUDY POPULATION: A digital phenotype using the EMR platform TriNetX (n=38 million patients between age 50 and 80) was created by clustering codes for the individual components of MetS (insulin resistance, hypertension, dyslipidemia, and central adiposity). The research network database on TriNetX was utilized to elucidate risk ratios for neurocognitive decline, Alzheimer's disease and related dementias (ADRDs), and cerebrovascular disease between a preclinical sample of older adults with and without MetS. Propensity score matching was used to match cohorts on demographic variables, medication use, and relevant comorbidities. Risk ratios (RR) and confidence intervals (95% CI) were presented for all outcomes. RESULTS/ANTICIPATED RESULTS: The digital phenotype for MetS expanded the sample from 29,830 to 274,703, a 10-fold increase. Sensitivity to the standard MetS ICD-10 code was 95.1%, showing strong agreement between coding schema. Older adults with MetS had higher risk of cognitive decline (RR: 1.30, 95% CI: 1.15–1.48, p <0.001), ADRDs (RR: 1.48, 95% CI: 1.25–1.75, p <0.001), and cerebrovascular issues (RR: 1.62, 95% CI: 1.55–1.70, p <0.001) when controlling for demographics, medication, and comorbidities. MetS individuals with cerebrovascular dysfunction had even greater risks for neurocognitive decline (RR: 1.70, 95% CI: 1.38–2.08, p < 0.001) and ADRDs (RR: 2.09, 95% CI: 1.56–2.80, p < 0.001) than those with only MetS. DISCUSSION/SIGNIFICANCE: Implementing a digital MetS phenotype in EMR effectively increased sample size and power for analyses. Older adults with MetS have higher risk for neurocognitive decline, especially among those with cerebrovascular dysfunction, highlighting a critical intervention window prior to overt cardiometabolic disease.

https://doi.org/10.1017/cts.2024.64