Graph showing disease severity on admission by Race/Ethnicity (upper). Notice the predominance of severe disease (orange) in Hispanic patients. Graph showing Race/Ethnicity Distribution by Week (lower). Notice the gradual increase and predominance of Hispanic patients (orange) in the later weeks of the study period compared to Black (blue) and White (green) patients.

**Disclosures.** All Authors: No reported disclosures

289. Post COVID Syndrome Cohort Characterization

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

**Background.** Post COVID Syndrome (PCS) is significant morbidity following COVID-19. This study aims to identify biomarkers that predict PCS in a Gulf Coast cohort known for poor health outcomes.

**Methods.** Since March 2020 the study Collection of Serum and Secretions for SARS CoV-2 Countermeasure Development (aka ClinSeqSer) has been enrolling subjects with confirmed acute COVID-19, with initial visit at 1 month and follow up every three months from symptom onset. At follow-up, subjects complete symptom questionnaire, physical examination, nasopharyngeal swab/saliva collection, blood draw. Subjects with >= one symptom new since COVID are PCS, remainder are Non-PCS experienced at initial one month visit and six months or longer. Univariate and bivariate analysis was carried out to study significant associations of currently available dataset (N=60).

**Results.** Cohort is 36 (60%) female, 24 (40%) male, age group of 49 (82%) 18-64 years, 11 (18%) 65+ years, 33 (55%) African American, 27 (45%) Caucasian. Median follow-up time after symptom onset: 290 days. Study cohort reported fatigue (32%), myalgias (38%), difficulty concentrating (33%), headache (32%) as most common symptoms during first month from initial symptom onset. Persistent symptoms (>6 months) are fatigue (25%), forgetfulness (22%), myalgias (18%), sleep difficulties (18%). Bivariate analysis shows that gender (female, P=0.04), past stroke/transient ischemic attack (P=0.04), deep venous thrombosis (P=0.02), abnormal kidney function (P=0.01) associate with PCS. Convalescent antibodies (ReSARS N IgG, S-RBD IgG) were measured and percentage inhibition of ACE2 spike interaction was recorded. Plasma inflammatory protein levels were measured using multiplex ELISA and Proximity Extension Assay technology during follow-up visit. Increased antibody ReSARS N IgG (2.91, 0.74-10.93; P=0.02) response and higher convalescent IL-10 (P=0.04) was associated with PCS. Percent inhibition of ACE2: spike interaction was not associated (P=0.79) with PCS. Nasal swab/saliva SARS-COV-2 sequencing has not identified a specific SARS-CoV-2 virus mutation predictive of PCS.

**Table 1. Demographic and Clinical Characteristics**

| Variables                                      | N (%) | Non-PCS N (%) | OR (95% CI) | p-value |
|------------------------------------------------|-------|---------------|-------------|---------|
| Age groups (years), 18-64                      | 38 (60) | 12 (60) | 0.46 (0.11, 1.84) | 0.3638  |
| Heart attack                                   | 1 (1.69) | 1 (1.69) | 0.99 (0.01, 0.08) | 0.0002  |
| Stroke or Transient ischemic attack            | 1 (1.69) | 1 (1.69) | 0.99 (0.01, 0.08) | 0.0002  |
| Chest pain from narrow heart vessels           | 3 (4.94) | 4 (6.67) | 0.15 (0.03, 0.82) | 0.0479  |
| Blood clot in lung (pulmonary embolism)        | 2 (3.33) | 0 (0.00) | 1.00 (0.00, 0.00) | 0.0001  |
| Blood clot in leg (deep venous thrombosis)     | 0 (0.00) | 0 (0.00) | 0.00 (0.00, 0.00) | 0.0001  |
| Other blood clots                              | 1 (1.69) | 1 (1.69) | 0.99 (0.01, 0.08) | 0.0002  |
| Abnormal kidney function                       | 0 (0.00) | 0 (0.00) | 0.00 (0.00, 0.00) | 0.0001  |
| Abnormal lung function                         | 0 (0.00) | 0 (0.00) | 0.00 (0.00, 0.00) | 0.0001  |
| Abnormal heart function                        | 12 (20.69) | 4 (6.67) | 0.94 (0.33, 3.27) | 1       |
| High blood pressure (hypertension)             | 20 (33.81) | 9 (14.81) | 0.46 (0.13, 1.65) | 0.2172  |
| Diabetess                                      | 9 (15.25) | 4 (6.67) | 1.00 (0.36, 3.18) | 0.0001  |

The bivariate analysis results showed that the gender (female, P=0.0354), history of stroke or transient ischemic attack (P=0.0382), chest pain from narrow heart vessels (P=0.0479), deep venous thrombosis (P=0.0241) and abnormal kidney function (P=0.0142) were associated with Post-COVID syndrome.

**Table 2. Antibodies and ACE2 spike inhibition.**

| Variables                                      | Mean | Median | Upper Quartile | Lower Quartile | Std Dev | P-value |
|------------------------------------------------|------|--------|----------------|---------------|---------|---------|
| N IgG (U/mL)                                   | 6.00 | 2.81   | 5.85           | 0.74          | 12.31   | 0.0191  |
| S-RBD IgG (U/mL)                               | 9.72 | 7.1    | 12.74          | 3.48          | 8.05    | 0.3056  |
| ACE2 spike inhibition                           | 42.26| 21     | 100            | 5             | 46.31   | 0.7292  |

The convalescent antibodies, ReSARS N IgG and S-RBD IgG were measured in U/mL and percentage inhibition of ACE2 spike interaction was recorded during follow-up visit for PCS vs Non-PCS subjects. The increased antibody ReSARS N IgG (2.91, 0.74-10.93; P=0.0159) response was associated with Post-COVID syndrome. Percent inhibition of ACE2: spike interaction was not associated (P=0.7932) with PCS.

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Included if "new since covid": For 60 subjects consented post-covid with completed questionnaire, results were analyzed. Most common symptoms reported were fatigue/tiredness or exhaustion (52%), muscle aches (38%), difficulty concentrating (33%) and headache (32%) as the most common symptoms during one month prior to their initial follow-up visit. The persistent symptoms experienced for six months or longer were fatigue/tiredness or exhaustion (25%), forgetfulness (22%), muscle aches (18%), and sleep difficulties (18%).
Table 3. Plasma inflammatory protein levels.

| Variables | Mean | Median | Upper Quartile | Lower Quartile | Std Dev | P-value |
|-----------|------|--------|---------------|---------------|---------|---------|
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Plasma inflammatory protein levels were measured using multiplex ELISA (MSD) and Proximity Extension Assay technology (Olink) recorded during follow-up visit for PCS vs Non-PCS subjects, revealing IL-10 (P=0.0379) was associated with development of PCS.

Conclusion. This study identifies initial clinical and biomarker predictors of PCS in a cohort that is 55% African American.

Figure 2. Antibody ReSARS N IgG

Antibody ReSARS N IgG measured in post-covid patients is significantly associated with post-COVID syndrome (P=0.0159). X axis: number of months from symptom onset to blood draw. Y axis: N IgG U/mL.

Figure 3. Spike amino acid mutations

Spike amino acid mutations detected in SARS-CoV-2 from acute-phase respiratory isolates. Nasal swab/saliva samples were collected from subjects with acute COVID-19 at time of enrollment into ClinSeqSer, stored at -80°C followed by RNA isolation and SARS-CoV-2 qRT-PCR. Samples with Ct value of ≤30 were then sequenced using NextSeq (Illumina). All sequences are deposited on GISAID and under BioProject (ID PRJNA681020). X axis: subject ID, with ID number increasing chronologically. Y axis: amino acid position of each mutation moving from N- to C-terminus.

Disclosures. Robert Garry, PhD, Zalgen Labs (Shareholder)

290. Persistence of Long COVID in SARS-CoV-2 Confirmed Cases One-Year Post Infection

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. Regardless of severity of acute SARS-CoV-2 illness, adults infected with SARS-CoV-2 are at risk for post-acute sequelae of COVID-19. Long COVID is typically classified as symptoms lasting greater than four weeks post-infection. We aimed to evaluate the frequency of resolved and unresolved long COVID symptoms in adults residing in greater Nashville, TN.

Methods. We conducted a longitudinal cohort study of SARS-CoV-2-positive and exposed individuals from March 20 to May 15, 2020. Participants for this analysis were included if: 1) ≥18 years; 2) SARS-CoV-2 positive by molecular or antibody testing; and 3) completed a one-year visit. Demographic and illness information were collected at enrollment, and long COVID symptoms were systematically collected at the one-year survey. Long COVID symptoms are defined as an adult experiencing at least one of the following symptoms four weeks post-infection: fatigue, confusion, shortness of breath, chest pain, cough, muscle aches, inability to exercise, or heart palpitations. Unresolved symptoms are defined as an individual with long COVID still experiencing symptoms at the one-year visit.

Results. A total of 115 adults enrolled and completed the one-year survey, of which 63 (54.8%) were SARS-CoV-2 positive with 33 (51%) were female, 5 (8%) were of Hispanic ethnicity, and 58 (92%) were white. At the one-year visit, 33 (52%)...