The Association of Frailty with Outcomes in Patients with Vasculitis

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INTRO / BACKGROUND

- Frailty, a syndrome characterized by increased vulnerability to stressors, is associated with poor health outcomes including hospitalizations, infections, and fractures.
- In our baseline analysis of individuals with multiple forms of vasculitis, we reported:
  - a high prevalence of frailty and pre-frailty
  - an association between frailty and worse health-related quality of life.

OBJECTIVE

- To evaluate the association of adverse health outcomes and patient-reported outcomes with frailty in patients with vasculitis at 1-year follow-up.
- To describe longitudinal changes in frailty status in individuals with vasculitis.

METHODS

- VascStrong is a longitudinal study utilizing the Vasculitis Patient-Powered Research Network (VPPRN), an internet-based prospective longitudinal cohort.
- Survey collected at 1-year follow-up.
- Frailty was measured using the FRAIL scale.
- Patient reported outcomes included patient reported outcomes (PROMIS) domains.
- Participants reported occurrence of hospitalizations, infections, fractures, and disease flares, during the prior year.
- Frailty status at baseline and follow-up was assessed.
  - Univariable ordinal logistic regression performed to identify factors associated with changes in frailty status.

RESULTS

- Between 10/28/2022 and 01/23/2023, 272/328 (82.9%) participants answered follow-up survey.
- Most participants were female (71.0%), non-Hispanic white, with a mean age 62.5 (SD 12.8) years.
- Most common diagnosis was GPA (39.1%), EGPA (14.3%), and MPA (12.9%).
- Prevalence of robustness, pre-frailty, and frailty was 33.8%, and 19.1%, respectively.
- Pre-frail and frail patients reported worse HRQoL at follow-up (Table 1).
- Although most patients were classified similar to baseline frailty status, transitions in frailty did occur between consecutive states (Figure 1).
  - No factors associated with changes in frailty score
  - Hospitalizations, infections, and reported flares were most frequent in participants classified as frail at baseline (Table 2).
  - Similarly observations with follow-up frailty status.

Table 1. Patient-reported outcomes among patients with vasculitis by frailty classification at 1-year follow-up.

<table>
<thead>
<tr>
<th>Frailty Status</th>
<th>Total</th>
<th>Non-frail</th>
<th>Pre-frail</th>
<th>Frail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>63.1</td>
<td>63.6</td>
<td>63.3</td>
<td>63.2</td>
</tr>
<tr>
<td>Sex (female)</td>
<td>71.8%</td>
<td>71.0%</td>
<td>73.0%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Race (white)</td>
<td>84.9%</td>
<td>83.9%</td>
<td>80.6%</td>
<td>85.2%</td>
</tr>
<tr>
<td>Flare (mean)</td>
<td>3.4</td>
<td>3.2</td>
<td>3.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>18.1%</td>
<td>15.6%</td>
<td>21.1%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Infection</td>
<td>44.6%</td>
<td>42.0%</td>
<td>48.4%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Fracture</td>
<td>7.3%</td>
<td>5.6%</td>
<td>9.1%</td>
<td>11.4%</td>
</tr>
</tbody>
</table>

CONCLUSIONS

At 1-year follow-up, pre-frailty and frailty remained prevalent in patients with vasculitis. Frailty and pre-frailty in patients with vasculitis identify a subset of patients at higher risk for adverse health outcomes.

Transitions in frailty status suggest that amelioration of frailty is achievable in a subset of patients with vasculitis.