

# Pennsylvania

## 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 prefrailty
  - 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 global assessment (PGA) and several PROMIS domains.
- Participants reported occurence of hospitalizations, infections, fractures, and disease flares, during the prior year.
- Frailty status at baseline and follow-up was assessed.
  - Univariable ordinal logistic regression were 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 47.1%, 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.

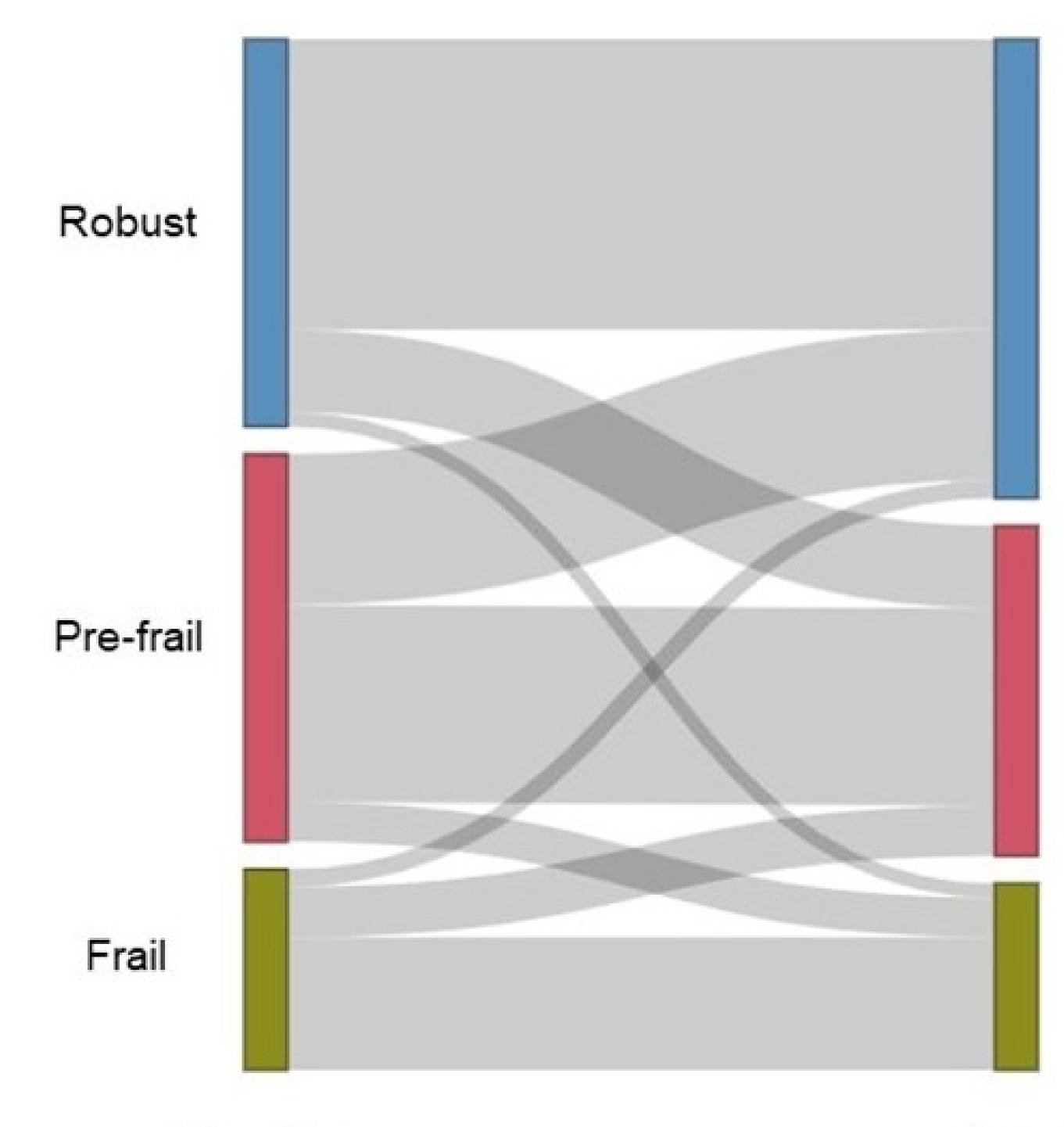
**Table 1.** Patient-reported outcomes among patients with vasculitis by frailty classification at 1-year follow-up.

	Robust (N = 128)	Pre-frail (N = 92)	Frail (N = 52)	p-value
Patient Global Assessment	2.0 (0.0, 5.0)	4.5 (1.0, 6.0)	6.0 (5.0, 8.0)	<0.0001
PROMIS-29 Pain intensity*	1.0 (0, 2.5)	3.0 (1.0, 5.0)	5.5 (4.0, 7.0)	<0.0001
PROMIS T-scores				
Anxiety	77.9 (71.2, 81.6)	73.3 (65.3, 81.6)	68.3 (63.4, 71.2)	<0.0001
Fatigue	48.6 (46.0, 53.1)	58.8 (51.0, 66.7)	64.6 (60.7, 69.0)	<0.0001
Depression	49.0 (41.0, 53.9)	52.9 (45.0, 58.9)	57.3 (49.0, 62.2)	<0.0001
Pain Interference	41.6 (41.6, 53.9)	55.6 (41.6, 61.2)	63.8 (58.5, 66.6)	<0.0001
Physical functioning	56.9 (45.3, 56.9)	41.8 (36.7, 48.0)	34.4 (32.1, 36.7)	<0.0001

**Table 2.** Adverse health outcomes of patients with vasculitis at one-year follow-up based on baseline frailty classification

	Total	Non-frail	Pre-frail	Frail	p-value
Hospitalizations	51 (18.8%)	13 (12.0%)	20 (18.5%)	18 (32.1%)	0.0075
Infections	138 (50.7%)	48 (44.4%)	55 (50.9%)	35 (62.5%)	0.0134
Severe infections*	19 (13.8%)	7 (14.6%)	6 (10.9%)	6 (17.1%)	0.7045
Fractures	21 (17.7%)	6 (5.6%)	9 (8.3%)	6 (10.7%)	0.4911
Flares	66 (24.3%)	17 (15.7%)	26 (24.1%)	23 (41.1%)	0.0005
Flares requiring treatment**	45 (68.2%)	9 (52.9%)	20 (76.9%)	16 (69.6%)	0.3698

Figure 1. Changes in frailty status among patients with vasculitis at one-year follow-up



Baselin	е		1-year follow-up
Baseline	Robust	Follow-up Pre-frail	Frail
Robust	81 (75%)	23 (21%)	4 (4%)
Pre-frail	42 (39%)	55 (51%)	11 (10%)

5 (9%)

Frail

14 (25%)

37 (66%)

### CONCLUSIONS

At 1-year follow-up, pre-frailty and frailty remained prevalent in patients with vasculitis.

Frailty and prefrailty 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.

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