# An Early Assessment of the Association Between Pectoralis Muscle **Measures and Frailty**

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### Background

- Pectoralis muscle measurements powerful predictors of mortality on continuous flow LVAD support
- **Association between pectoralis** muscle measurements and frailty measurements not previously reported

### Purpose

To determine the association between pectoralis muscle measurements and objective frailty assessments

#### **Methods**

Study design: Retrospective

- Single center, CF LVAD implantation database, between 2017 - 2018
- Inclusion:
  - **Pre-operative Chest CTs an frailty** assessments within 3 months of LVAD implantation (n=27)
- Unilateral pectoralis muscle mass and attenuation (approximated by mean Hounsfield units) measured on pre-operative chest CT scans using Slice-O-Matic software.
- Frailty was assessed with a 6 point **Clinical Frailty Scale**
- Multi- variable linear regression

### Frailty Assessment

#### Clinical Frailty Scale\*

 Very Rt – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.



 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.



Managing Well - People whose medical problems are well controlled, but are not regularly active beyond routine walking.



4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.



5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.



 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

### Results

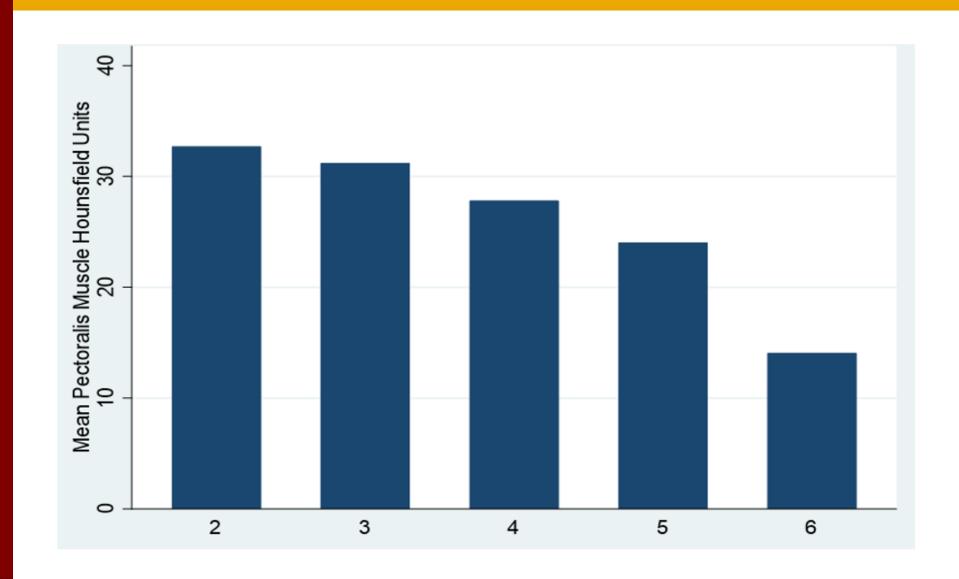
#### **Pectoralis Tissue Attenuation**

- Each frailty score increase was associated with an adjusted decrease of 3.9 in the mean pectoralis Hounsfield units (95% VI: -0.74 to -0.41, p = 0.03)
- Adjusted for age, sex, INTERMACS

#### **Mean Pectoralis Mass**

An association between pectoralis muscle mass index and frailty scores was not detected (-0.61 95% CI = -1.4 to 0.2; p = 0.15)

## Mean Pectoralis Muscle Tissue Attenuation By Frailly Scores



#### Conclusion

- In this small sample of patients with simultaneous frailty and pectoralis muscle measurements, a significant association was detected between tissue attenuation and frailty.
- Further data needed to confirm this finding
- Further work needed to determine component of frailty can be reversed with LVAD support

#### **DISCLOSURES:**

I will not discuss off label use and/or investigational use of the following drugs/devices:

Ranit John: Abbott: speakers bureau, research grants

Rebecca Cogswell: Abbott: speakers bureau. Medtronic: speakers bureau, advisory board, consultant