E-Poster

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Fluctuations in Dysautonomia Profiles Captured in Subjective and Objective Tests

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

In health, reflexes within the cardiovascular system react rapidly to maintain cardiac output. Dysautonomia refers to abnormal function of the autonomic nervous system which can result in either orthostatic hypotension (OH), dizziness with hypotension on standing, or postural orthostatic tachycardia syndrome (POTS), tachycardia without hypotension. POTS is characterized by:

1. Frequent symptoms that occur with standing, such as light-headedness, palpitations, tremor, generalized weakness, blurred vision, exercise intolerance, and fatigue
2. An increase in heart rate of ≥ 30 beats per minute on standing from supine and
3. The absence of orthostatic hypotension (> 20 mmHg drop in systolic blood pressure).

The pathophysiology for dysautonomia remains unclear and literature refers to patients either having OH or POTS. Possible mechanisms include autonomic denervation leading to impaired peripheral venoconstriction leading to venous pooling, hypovolemia, hyperadrenergic stimulation with raised plasma norepinephrine levels or deconditioning which may all be compounded by anxiety and hypervigilance secondary to the underlying physiological abnormalities. The symptoms of dysautonomia can be severely limiting for those who are affected, restricting individuals' engagement in paid work and societal roles. To describe the dysautonomia profiles in a cohort of five patients with objective signs of dysautonomia and a diagnosis of persistent Long COVID (LC) or Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS).

METHODS

Patients underwent weekly objective NASA lean tests for eight weeks whilst receiving standard clinical interventions for dysautonomia including increasing fluid and salt intake, pacing and calf activation. Subjective data was also collected using the Yorkshire Rehabilitation Scale (YRS) and Composite Autonomic Symptom Score (COMPASS-31) patient-reported outcome measures.

RESULTS

Patients displayed a variety of dysautonomia profiles (OH, POTS and normal) over the weeks of data collected. One patient maintained a consistent POTS profile on the NASA lean test, two patients switched between two profiles and two patients switched between all three profiles. The change between these profiles is not consistent with variations in the subjective YRS and COMPASS-31 outcome measures. Additional patient profiles will be available for analysis to be presented with this cohort.

CONCLUSION

These preliminary results suggest that dysautonomia profiles are not constant and can switch between profiles. Individuals with dysautonomia and clinicians need to be aware of this while managing LC, ME/CFS and related conditions. These findings may further inform our understanding of the pathological mechanisms in dysautonomia and future management strategies.

Statement of Disclosures

None

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