

Postural Orthostatic Tachycardia Syndrome (POTS)-Orthostatic Giddiness and Beyond!

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ABSTRACT

Background: Postural Orthostatic Tachycardia Syndrome (POTS) is an autonomic nervous system disorder characterised by orthostatic intolerance, reduced concentration, headache, nausea, fatigue, blurred vision, anxiety, cognitive dysfunction, gastro-intestinal disturbances, sleep disturbances, over active bladder, and exercise intolerance.

Diagnosis: POTS is suspected clinically. However, the diagnosis is based on the changes in heart rate when moving from recumbent to a standing position. Various scales are available to assess symptom burden in POTS.

Conclusion: The patients with POTS should be screened for anxiety and depression and patients with migraine should be screened for POTS for better therapeutics and understanding of this entity.

Keywords: POTS; Headache; Migraine; Anxiety; Depression

INTRODUCTION

Postural Orthostatic Tachycardia Syndrome (POTS) is a disorder of the autonomic nervous system that results in an exaggerated adrenergic response when transitioning to an upright position. The prevalence of POTS in developed countries is around 0.2-1%. Its five times more common in females than males and is disabling for 25% of patients. POTS is characterized by symptoms of orthostatic intolerance like light-headedness, palpitations, tremulousness, and generalized weakness. Other non-cardiac symptoms like reduced concentration, headache, nausea, fatigue, blurred vision, anxiety, fatigue, cognitive dysfunction, gastro-intestinal disturbances, sleep disturbances, over active bladder, and exercise intolerance are also found in patients with POTS (Figure 1) [1].

DESCRIPTION

Diagnosis

According to the expert consensus statement of the Heart Rhythm Society, POTS is diagnosed based on the following criteria: A rise in heart rate of at least 30 beats per minute when transitioning from a recumbent to a standing position that lasts for more than 30 seconds (or more than 40 beats per minute in people aged 12 to 19); the absence of orthostatic hypotension (>20 mmHg drop in systolic blood pressure); and common standing-related symptoms like lightheadedness, palpitations, tremulousness, generalized weakness, blurred vision, exercise intolerance, and exhaustion. The aetiology is considered multifactorial but is poorly understood [2].

Symptoms other than orthostatic giddiness

90% of people may have both POTS and migraines. Among patients experiencing headache in POTS, the rate of migrainous headache varies from 28-96%. Cortez et al., carried out a prospective study to analyse the types of headache and sensory functions in patients with POTS. Around 85% patients had recurrent and problematic headache and 57% patients met the ICHD-3 criteria for migraine. The patients with POTS had more

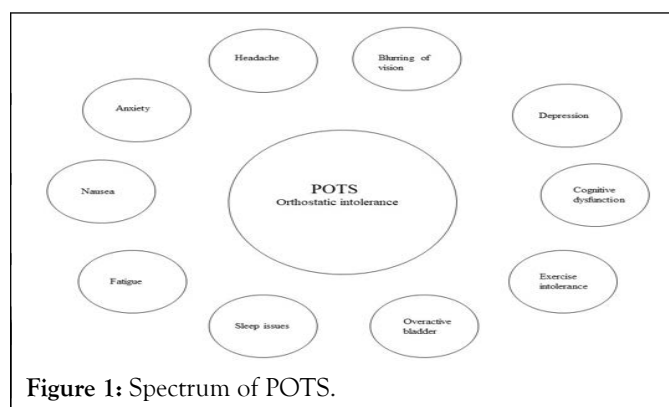


Figure 1: Spectrum of POTS.

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Received: 16-Dec-2024, Manuscript No. JCEC-24-35893; **Editor assigned:** 19-Dec-2024, PreQC No. JCEC-24-35893 (PQ); **Reviewed:** 02-Jan-2025, QC No. JCEC-24-35893; **Revised:** 09-Feb-2026, Manuscript No. JCEC-24-35893 (R); **Published:** 16-Apr-2026, DOI: 10.35248/2155-9880.26.17.1006

Citation: Danigondra DD, Mailankody P, Sathyaprabha TN (2026) Postural Orthostatic Tachycardia Syndrome (POTS)-Orthostatic Giddiness and Beyond!. J Clin Exp Cardiol. 17:1006.

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frequent exacerbations of headache with activity than chronic migraine patients. They found a significantly reduced light sensitivity and forearm sensitivity (non-trigeminal site) which is phenotypically different site compared to chronic migraine patients reflecting generalized pattern of sensitization in POTS. The patients with POTS having Cranio-Facial Autonomic Symptoms (CAS) should be screened for migraine [3-5].

The patients with POTS had fivefold increase in symptom burden rate compared with controls with palpitations, fatigue and concentration difficulties being the three most severe symptoms. Total MAPS score of ≥ 42 has a sensitivity of 97% and specificity of 98% for discriminating POTS patients from healthy controls.

Recent studies have suggested the association between POTS and psychiatric symptoms like anxiety and depression. Though the patients with POTS experience anxiety and depression, the link between these two is unclear. Patients with anxiety experience tachycardia, tremors, light-headedness, sweating, and palpitations. There are case reports wherein POTS was misdiagnosed as anxiety. After being diagnosed with POTS, only 37% of patients reported having a mental issue, although around 77% of patients with same symptoms were informed by a physician that their symptoms were caused by a psychiatric disorder [6-8].

Mild to moderate depression is found in 87% of patients with POTS and around 50% patients have mild to moderate anxiety and sleep disturbances. According to a retrospective study, moderate to severe anxiety and sadness were present in 59.3% of patients. According to post-treatment observations, three out of seven patients reported reduced anxiety, while four out of seven patients reported improvements in their depressive symptoms. According to these findings, treating POTS may help reduce anxiety and depression. Patients experiencing symptoms of POTS should be screened for anxiety and depression as well as get multispecialty treatment because these conditions are more common in POTS patients. This will help ensure an early and correct diagnosis [9].

Treatment

POTS is constellation of many symptoms. Since the aetiology of POTS is uncertain, managing symptoms is the focus of treatment. None of the treatment is approved in POTS. Non pharmacologic treatment includes increased water and salt intake, compression stockings to augment the venous return. Other drugs which are used off-label include fludrocortisone, propranolol, oral desmopressin (DDAVP), midodrine, modafinil, pyridostigmine, methyldopa. In a recent randomised trial evaluating the usefulness of ivabradine in hyperadrenergic

POTS, patients in Ivabradine group had significant reduction in heart rate and improvement in quality of life.

CONCLUSION

There is a relatively high prevalence of headache, depression and anxiety in patients with POTS. Therefore, in order to ensure that the diagnosis of POTS is not overlooked, clinicians should specifically enquire about orthostatic giddiness symptoms if patients exhibit the aforementioned symptoms. In addition, when a diagnosis of POTS is made, screening for headache, anxiety and depression should be undertaken so that management can be tailored to the individual patient. A close collaboration and multidisciplinary care involving the Neurologist, psychiatrist, Neurophysiologist and Cardiologist will lead to better understanding of this condition and minimise the challenges in the management of POTS.

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