

An observational retrospective study of the prevalence of comorbid postural orthostatic tachycardia syndrome (POTS) in narcolepsy

Gerard J. Meskill, MD, Riddhi Rege, Sarah D. Meskill, MD MS

Tricoastal Narcolepsy and Sleep Disorders Center, Sugar Land and Austin, TX

Introduction

- Postural orthostatic tachycardia syndrome (POTS) is a clinical syndrome of dysautonomia associated with an excessive increase in heart rate following a shift to standing posture. As of 2019, POTS has a prevalence of 1-3 million (0.3-0.9%) in the United States.
- Narcolepsy is a chronic neurologic condition of persistent hypersomnolence irrespective of total sleep time that also is associated with REM-sleep dissociative features (i.e., cataplexy, sleep paralysis, sleep-related hallucinations).
- In recent years, viral infections have been established as a trigger for both neurologic conditions.

Methods

- A chart review was performed for records from 11/1/2020 to 12/20/2022.
- The overall clinic population of narcolepsy was identified by searching the for the ICD-10 codes G47.411 (narcolepsy type 1 [NT1]), and G47.419 (narcolepsy type 2 [NT2]). The past medical history of these charts then was searched for a history of POTS via word search for ‘POTS’ to identify patients with both conditions.
- A separate chart review was performed to identify all patients with POTS in the clinic via chart word search for ‘POTS’.

Results

- Of the 1,433 total patients in the clinic population, 207 narcolepsy patients (NT1=73, 35.3%; NT2=134, 64.7%) and 24 POTS patients were identified.
- The co-morbid prevalence of narcolepsy with POTS was 8.7% (18, 95% CI 5.2-13.4%); of those patients with POTS, 75% had narcolepsy (95% CI 53.3-90.2%).
- Co-morbid prevalence was higher in NT1 (13, 17.8% with 95% CI 9.8-28.5%) than NT2 (5, 3.7% with 95% CI 1.2-8.5%).
- The overall co-morbid prevalence and the NT1 comorbid prevalence was significantly higher than the overall clinic POTS population (1.26% with 95% CI 0.75-1.98%) and the national POTS population (0.3-0.9%).

Discussion

- The prevalence of POTS is higher in narcolepsy patients than the overall population, especially in the NT1 subgroup.
- Clinicians should consider screening POTS patients for narcolepsy, and vice versa.
- Further studies are warranted to explore the etiology of co-morbid narcolepsy and POTS.

| Table 1 | Overall | NT1 | % NT1 | NT2 | %NT2 | NT1+2 | %NT1+2 |
|-------------------|---------|-----|-------|-----|-------|-------|--------|
| Clinic population | 1433 | 73 | 5.09% | 134 | 9.35% | 207 | 14.4% |

Table 1: analysis of narcolepsy patient in the Tricoastal Narcolepsy and Sleep Disorders Center patient population as of 12/2022
Key: NT1 = narcolepsy type 1; %NT1 = percentage of patient population with NT1; NT2 = narcolepsy type 2; %NT2 = percentage of patient population with NT2; NT1+2 = narcolepsy types 1 and 2; %NT1+2 = percentage of patient population with narcolepsy

| Table 2 | Population | % of subgroup | 95% CI |
|---------|------------------|---------------|------------|
| Overall | 24 (out of 1433) | 1.67% | 0.75-1.98% |
| NT1 | 13 (out of 73) | 17.8% | 9.8-28.5% |
| NT2 | 5 (out of 134) | 3.73% | 1.2-8.5% |
| NT1+2 | 18 (out of 207) | 8.7% | 5.2-13.4% |

Table 2: analysis of POTS patients at Tricoastal Narcolepsy and Sleep Disorders Center as of 12/2022
Key: subgroup refers to the population in the far-left column (e.g., “overall” for row 1). Abbreviations are the same as table 1.



Contact Information:
Tricoastal Narcolepsy and Sleep Disorders Center
www.tricoastalsleep.com | (281) 566-2621
gmeskillmd@tricoastalsleep.com

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