Sleep Disorders in Patients with Postural Tachycardia Syndrome
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Background

• Postural tachycardia syndrome (POTS) is a heterogeneous disorder characterized by an exaggerated increase in standing heart rate accompanied by symptoms of orthostatic intolerance.
• Patients with POTS typically report significant fatigue, daytime sleepiness, and diminished quality of life.
• In this study we aimed to characterize the sleep patterns in patients with POTS and their relation to symptoms of fatigue and excessive daytime sleepiness.

Objective

To define sleep patterns in patients with POTS and objective measures.

Subjects & Methods

• Patients were diagnosed with POTS (n = 17) based on clinical examination and autonomic testing at our center.
• Age and gender matched control subjects (n = 10) were selected from patients presenting to the sleep clinic for any sleep-related complaint.
• All patients completed the following questionnaires:
  • The Epworth Sleepiness Scale (ESS) to assess sleepiness.
  • The Fatigue Severity Scale (FSS) to assess fatigue.
  • The Beck Depression Inventory (BDI) to assess comorbid depression.
  • The Morningness-Eveningness Questionnaire (MEQ) to assess circadian chronotype.
• Sleep diaries over the course of two weeks to assess sleep onset latency (SOL), wake after sleep onset (WASO), and sleep efficiency (SE).
• Results were compared using 2-tailed T-test analysis. A p value of < 0.05 was deemed statistically significant.

Results

• POTS patients and control subjects were of similar age (29 ± 8 POTS vs. 29 ± 5 control).
• The majority of subjects in both groups were female (72% POTS vs. 70% control).
• Compared with controls, patients with POTS scored significantly higher on the FSS (52±11 vs. 42±10, p = 0.02).
• There was no significant difference in subjective sleepiness as determined by ESS scores.
• There was no significant difference in depression scores or MEQ chronotype scores.
• POTS patients exhibited more rapid heart rates during both REM and NREM sleep.
• Objective SOL was higher in POTS patients, however these values did not reach statistical significance.
• There was no difference between subjective and objective SOL, WASO and SE.

Sleep Diary vs PSG Data

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<th>Patient demographics.</th>
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<td>Age (years)</td>
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<td>POTS (n = 17)</td>
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<td>Control (n = 10)</td>
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Conclusions

• Patients with POTS reported greater subjective daytime fatigue, however there was no difference in sleepiness scores when compared to controls.
• POTS patients exhibited less severe sleep disordered breathing and periodic leg movements.
• POTS patients reported a neutral (neither morning nor evening) chronotype.
• With the exception of a trend towards less REM sleep and increased heart rates during sleep, there was no difference in polysomnography between POTS patients and controls.

References