ALTERG® Case Study

Postural Orthostatic Tachycardia Syndrome (POTS)

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Who: 32 year-old female referred to PT with generalized fatigue and weakness related to Postural Orthostatic Tachycardia Syndrome (POTS).

What: The patient was unable to tolerate upright positions without suffering a headache, syncope, and increased heart rate. Started using the AlterG Anti-Gravity Treadmill™ to help with conditioning and improving tolerance to upright positions.

Why: The AlterG enabled patient to stand, walk, and exercise longer than with traditional treatment options. The result was the ability to begin cardiovascular training more gently and allow patient to improve endurance in a more controlled setting.

Introduction

Patient is a 32 year-old female who was referred to physical therapy (PT) due to generalised fatigue and weakness related to Postural Orthostatic Tachycardia Syndrome (POTS). She also has arrhythmia and had ablation treatments. She experienced severe headaches that lasted for hours or even days at a time. She experienced syncope in upright positions, causing restriction with daily activities, including having to lie down right away after taking a quick shower and spending most of her time on the couch. She had not been able to drive, and had been off of work since the start of her symptoms. She had not been able to spend much time with her 3 children and suffered from fatigue, even when walking short distances, like from the parking lot into the PT clinic.

Goals

Short Term Goals (to be achieved within 2-3 weeks):

- Tolerate upright positions for at least 15 minutes without symptoms.
- Tolerate performing home exercises in the sitting position for at least 10 minutes without symptoms.

Long Term Goals (to be achieved within 6-8 weeks):

- Perform household chores for at least 30 minutes at a time without symptoms.
- Return to work at regular hours without difficulty and symptoms.
- Resume prior level family activities, to include leisure and school activities, without symptoms.
- Resume leisure walking and prior fitness routine without symptoms.

History

The patient started physical therapy in July 2010, with only supine exercises to mobilise the core. She was only able to tolerate about 30 minutes of the therapy session. The goal at this time is to normalise general circulation through the muscle pumping action of the core and lower extremity muscles. Another goal was to improve general body conditioning. The patient would get very tired and lightheaded after each session. After 2 weeks, a recumbent bike was added to bed exercises, and she was only able to tolerate 4 1/2 minutes. She was unable to attend PT appointments for around 3 weeks due to side effects of her new medication. After roughly 4 1/2 weeks, exercises were resumed, which she tolerated well, including 7 minutes on the recumbent bike. She felt no dizziness, but did report fatigue.

AlterG training started in October 2010 with no incline, a speed of 1.0 mph and 50% body weight. She tolerated 15 minutes of gait activity that day, which she was unable to do otherwise. After 2 weeks, she was progressed on the AlterG to 55% body weight, 1.0 mph. Her heart rate would normally start at 119 bpm, and then drop to 84 bpm after walking on the AlterG. 2 1/2 weeks after AlterG training started, she was tolerating 20 minutes of walking at 55% body weight and 1.2 mph. Her heart rate normalised from 118-119 bpm to 84-93 bpm after walking. Currently, she continues to use the AlterG for up to 30 minutes as her schedule permits, at 55% body weight and up to 1.5 mph.

Results

The patient was pleased with the progress they achieved. She is now able to drive safely to work and clinic appointments. She is now back to work at 12-15 hours a week. She reports decreased tachycardia and light hotheadedness by at least 50%. She started to do some light household chores without increased symptoms. She is able to spend more time with her children and husband – helping with homework, playing and other leisure activities – without increased symptoms.

The AlterG Anti-Gravity Treadmill was incorporated into this treatment program to:

- Minimise cardiac load with activities by decreasing weight-bearing.
- Develop increased tolerance to walking and upright activities.
- Increase general body conditioning.

Since patient had been severely deconditioned due to prolonged periods of bed rest and orthostatic intolerance, the AlterG enabled the patient to stand, walk and exercise longer than with traditional treatment options. The result was the ability to begin cardiovascular training more gently, and allowed the patient to improve endurance in a more controlled setting.

Weeks	Program	Speed (mph)	Incline %	Time (mins.)
1	Walking at 55% body-weight	1.0	0	5
2-3	Walking at 55% body-weight	1.0	0	17
4	Walking at 55% body-weight	1.0	0	30
5-9	The patient did not receive any treatment due to undergoing ablation surgery			
10	Walking at 55% body-weight	1.0	0	20
11	Walking at 55% body-weight	1.2	0	25
12	The patient missed appointments due to sickness from new medication			
13-21	Walking at 55% body-weight	1.2	0	20
22-25	Walking at 55% body-weight	1.3	0	22
26-onwards	Walking at 55% body-weight	1.5	0	25