International Journal of General Medicine and Pharmacy (IJGMP)
ISSN (P): 2319–3999; ISSN (E): 2319–4006
Vol. 13, Issue 1, Jan–Jun 2024; 77–86

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

EFFECTIVENESS OF ENDURANCE AND STRENGTH TRAINING EXERCISES IN THE MANAGEMENT OF POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME SUBJECT

Abijaya Jaya Krishnan[1], Karthika Govindaraj[2], Pradeepa Mani[3] & Sivakumar Chinnusamy[4]

[1]BPT Student, PPG College of Physiotherapy Affiliated to the Tamil Nadu Dr M.G.R Medical University, Chennai

[2]Associate Professor, PPG College of Physiotherapy Affiliated to the Tamil Nadu Dr M.G.R Medical University, Chennai

[3]Vice Principal, PPG College of Physiotherapy Affiliated to the Tamil Nadu Dr M.G.R Medical university, Chennai

[4]Principal, PPG College of Physiotherapy Affiliated to the Tamil Nadu Dr M.G.R Medical university, Chennai

ABSTRACT

Background: *Postural Orthostatic Tachycardia syndrome (POTS) is defined as the presence of chronic symptoms of orthostatic intolerance accompanied by an increased heart rate ≥ 30 bpm within 10 minutes of assuming an upright posture in the absence of orthostatic hypotension associated with cardiac and noncardiac symptoms.*

Objectives: *The study's primary objective was to find out the efficacy of endurance training and strength training exercises in the management of postural orthostatic tachycardia syndrome subject.*

Subject and Methods*: A pre-test, post-test single case study design with a 30-year-old female patient who met the inclusion criteria of POTS diagnosis. She received exercise training which includes endurance and strength training exercises for 12 weeks for 4 alternative days per week in the first and second month and at the beginning of the third month the training was performed for 5 days per week. The total treatment duration was 50 minutes/ day in the first and second month and at the beginning of the third month the treatment duration progressed to 80 minutes/ day. The outcome measures are active stand test to assess the heart rate and blood pressure then EQ-5D-5L questionnaire which has a descriptive system and visual analogue used to assess the quality of life. The pre and post test for heart rate, blood pressure and quality of life were recorded. On the 1st week pre-test was taken before exercise and post test was taken after the exercise training and at the end of 1st, 3rd, 6th, 9th, and 12th week post-test were noted.*

Result: *The result of this study showed a significant improvement in 30-year-old female with POTS. The heart rate of patient at rest was 70 bpm and after 5 minutes of standing the heart rate increased to 122 bpm and this is the pre-test value at the 1st week and after the exercise training the post test values are noted on standing for 5 minutes and it was recorded at the end of 1st, 3rd, 6th, 9th and 12th week the post test values were 120 bpm, 115 bpm, 100 bpm, 85 bpm, 75 bpm respectively using the active stand test. The blood pressure of the patient at rest was 110/62 mmHg and after 5 minutes of standing the blood pressure decreased to 80/53 mmHg and this is the pre-test value at the 1st week and after the exercise training the post test values are noted on standing for 5 minutes and it was recorded at the end of 1st, 3rd, 6th, 9th, and 12th week the post test values were 90/60 mmHg, 95/67 mmHg, 100/70 mmHg, 112/75 mmHg and 118/80 mmHg respectively using the active stand test. Also, the pre-test value for self-rated health at the 1st week was 30 and the post test values were 43, 64, 80, and 90 at the end of 3rd, 6th, 9th and 12th week respectively using EQ VAS and the descriptive system of EQ-5D-5L were assessed at 1st week as pre-test and at the end of 12th week as post test.*

Conclusion: *There is a significant reduction in the symptoms and improvement in the quality of life of the patient following 12 weeks of endurance and strength training exercises in postural orthostatic tachycardia syndrome subject.*

Clinical Implications*: Endurance training exercises is found to produce significant effect when combined with strength training exercises to manage postural orthostatic tachycardia syndrome subject.*

KEYWORDS: *POTS, Endurance Training, Strength Training, Active Stand Test (AST), EQ-5D-5L Questionnaire, Heart Rate (HR), Blood Pressure (BP).*

Article History

Received: 16 Jun 2024 | Revised: 16 Jun 2024 | Accepted: 25 Jun 2024