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EFFECT OF MULTI-DIRECTIONAL STEP EXERCISES ALONG WITH WEIGHT SHIFTING TO IMPROVE BALANCE AND GAIT IN STROKE PATIENTS – *A single case study*

1**Dr.MULLAIMATHI VADHANAM C, MPT NEURO, ASSOCIATE PROFESSOR**, 2**Prof Dr. B SENTHIL KUMAR, MPT, Ph.D, SRP (UK), UCA College of Paramedical Sciences, Chennai**

ABSTRACT

A 60-year-old male with history of stroke for past 5 months had complaints of walking difficulty with asymmetrical weight shifts, with hemiplegia on the left side. He was diagnosed as sub acute stroke with the investigations of MRI and CT scan. Multi-directional step exercises along with weight shifting for 4 weeks is given to the patient as treatment plan.

Key words: Stroke, Multi-directional Step Exercise, Balance, Gait

INTRODUCTION

Stroke is one of the major causes of permanent disability. Stroke patients commonly exhibit symptoms of hemiplegia. Stroke patients have decreased balance ability. Due to this, asymmetrical posture occurs. The gait disturbances after stroke are the main cause of impaired functional ambulation. Causes decreased social participation and poor quality of life.

CASE DESCRIPTION

A 60-year-old male patient with a history of stroke for past 5 months had complaint of walking difficulty and decreased balance. Came to UCA College of Paramedical Sciences outpatient clinic. Known case of hypertension under medication now.With MMSE (Mini Mental Status Examination) score more than 21. Ability to stand independent for 30 seconds. History of ischemic stroke. Brunnstrom stage 4.

PRE OUTCOME MEASURES

The baseline assessment of the patient before treatment follows:

OUTCOME MEASURES	SCORES
Berg Balance Scale	38
Functional Gait Assessment Scale	9

INTERVENTION

Treatment for stroke includes multi-directional step exercises along with weight shifting exercises

Treatment Protocol:

Study duration – 4 weeks

Multi-directional step exercise (4 positions):

A mirror was placed in front of them for visual feedback.

First Position:

Patient asked to distribute their body weight between both lower extremities equally.

Second Position:

Take a side step with the affected extremity along with shifting their trunk towards the affected side.

Third Position:

Take a step forward with affected lower extremity along with their trunk bending slightly forward.

Fourth Position:

Take a step backward with affected leg with shifting trunk backwards.

Passive Range of Motion

Passive range of motion exercises for upper and lower limb of the affected extremities.

POST-OUTCOME MEASURES

OUTCOME MEASURES	SCORES
Berg Balance Scale	43
Functional Gait Assessment Scale	11

CASE DISCUSSION

Berg Balance Scale:
On comparing the Berg balance scale on day one and after 4 weeks of treatment, the patient showed **GOOD** improvement.

Functional Gait Assessment:
On comparing the functional gait assessment on day one and after 4 weeks of treatment, the patient showed **GOOD** improvement.

RESULTS

The results of the study show that multi-directional step exercises, along with weight shifting and helps to improve balance and gait in sub-acute stroke patient.

CONCLUSION

The aim of the study was to determine the effectiveness of multi directional step exercises along with weight shifting , helps in improving balance and the gait pattern in sub-acute stroke patient.So this study concludes that multi-directional step exercises along with weight shifting reduces fall risk, improves balance and gait pattern in sub-acute stroke patient.