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Effectiveness Of Resistance Training Coupled With Mobility Exercises For Sarcopenia Patient

-A SINGLE CASE STUDY

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Abstract: A 60 years old female had a decrease in muscle mass and muscle strength. She has been given hand held dynamo meter and SARC-F questioner through which she had been diagnosed as Sarcopenia. She underwent 12 weeks of resistance training program.

KEYWORDS: Sarcopenia, muscle mass, resistance training.

INTRODUCTION

Sarcopenia is a progressive, systemic decrease in muscle mass, muscle strength or physiological muscle function associated with aging. Skeletal muscle mass will decrease at a rate of 1-2 % per year after the age of 50 and skeletal muscle strength will reduce by 1.5 % at age 50-60. Coupling resistance training with mobility exercises not only improves the muscle strength and quality but also ensures better quality of life.

CASE DESCRIPTION

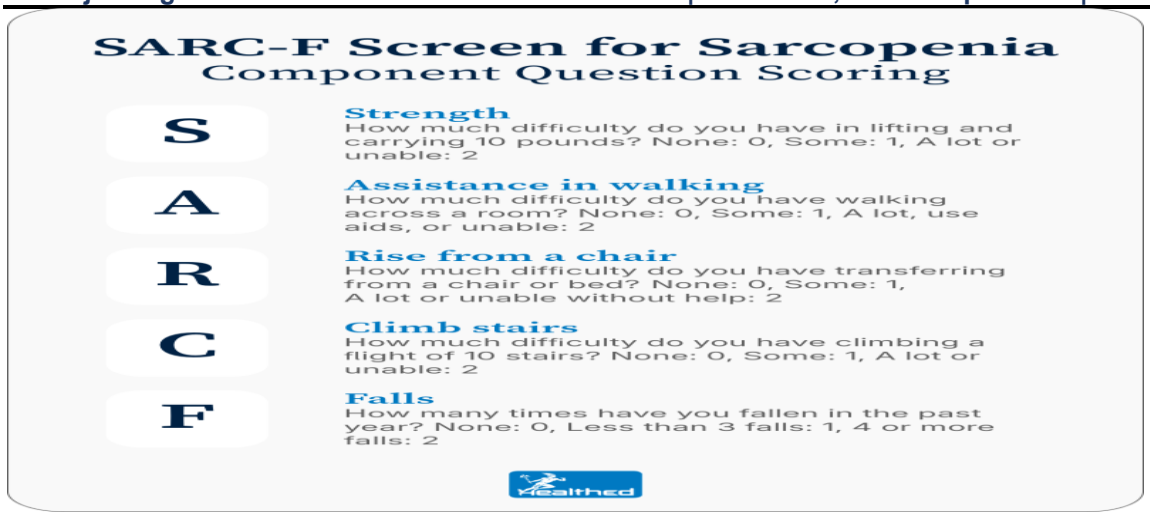
A 60years old female, who is retired bank employee came to UCA college of paramedical sciences out patient department with the complaint of fatigue, unable to climb stairs and even sit to stand is difficult for past 2years. Patient initially consulted a orthopedician and he diagnosed that it is age related decrease in muscle mass and strength, which is known as Sarcopenia. So, he referred patient for physiotherapy to undergo strength training program.

OUTCOME MEASURES

The baseline assessment of the Patient before treatment follows:

SARC-F Questionnaire

• SARC-F is a questionnaire consisting of five questions
Its components comprise:
S – Strength
A - Assistance with walking
R - Rising from a chair
C - Climbing Stairs
F – Falls
•The score ranges from 0 to 10 and each item receives 0 to 2 points.
Sarcopenia is indicated by a score more than 4 out of a total of 10 points



Hand Dynamometer

- Employed to measure Handgrip Strength which is moderately related to muscle strength.
- EWGSOPII suggested the cutoff value of Handgrip Strength as <27 kg for men and <16 kg for women.

PRE OUTCOME MEASURES

S.NO	OUTCOME MEASURE	SCORE
1.	SARC- F QUESTIONER	7
2.	HAND DYNAMOMETER	12 Kg

INTERVENTIONS

After proper assessment of the patient, the training program has be prescribed

• The Training program lasts for 12 weeks and each session lasts for 60 minutes.

• Every session begins with:
▪ Warmup - 5 minutes
▪ Upper Body Mobility Exercises -10 mins - 1 set × 8 reps
✓ THORACIC ROTATION
✓ BIRD AND DOG
✓ CAT AND CAMEL
Lower Body Mobility Exercises - 10 mins -1 set × 8 reps
✓ PELVIC BRIDGE
✓ HIP FLEXION WITH KNEE EXTENSION
✓ LEG FRONT AND BACK SWING

This is followed by a 40 minutes of Resistance training session which consists of the following workouts:

Exercise Selection
UPPER BODY
✓ Bicep Curl
✓ Shoulder Press
✓ Chest Press
✓ One arm Triceps Extension
✓ Wrist Curl
LOWER BODY
✓ Squats
✓ Forward Lunges
✓ Wall Squat Hold
✓ Calf Raises

Resistance is added in the form of Resistance Bands , Kettle bell and Dumbbells according to the type of Exercise.

Training Frequency -

Four Sessions per week - 60 minutes per session

• 2 sessions - Upper Body

• 2 sessions - Lower Body

Rest Periods - 60 seconds between sets;

2 to 3 minutes between exercises

PROGRESSION

WEEKS	REPETITIONS/RESISTANCE
1-2	2 sets × 15 reps; No resistance
3-4	4 sets × 15 reps; No resistance
5-6	2 sets × 15 reps; 1 kg resistance
7-8	2 sets × 15 reps; 1.5 kg resistance
9-10	2 sets × 15 reps; 2 kg resistance
11-12	2 sets × 15 reps; 2.5 kg resistance

The session ends with cool down stretches that lasts for about 5 minutes

POST OUTCOME MEASURES

S.NO	OUTCOME MEASURE	SCORE
1.	SARC- F QUESTIONER	3
2.	HAND DYNAMOMETER	16 Kg

RESULT

On Comparing the SARC-F Values before and after treatment,
Patient showed a value difference of **'4',** which shows that she has **GOOD** improvement in quality of life

On Comparing the Handgrip Strength values assessed using a hand dynamometer before and after treatment,
Patient showed a value difference of **'4'** . which shows that she has **GOOD** improvement in muscle strength.

CONCLUSION

From the above study , it is clear that 12 weeks of Resistance Training coupled with Mobility Exercises is found to be effective in improving muscle strength and quality in older adults with Sarcopenia.

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