THE ROLE OF PHYSICAL THERAPY IN AMYOTROPHIC LATERAL SCLEROSIS

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PURPOSE

To demonstrate the importance of physical therapy and rehabilitation in patients with Amyotrophic Lateral Sclerosis (ALS).

MATERIAL AND METHODS

The research was done according to the PRISMA MODEL, with a selection of systematic reviews and a search through key terms from scientific and reliable literature (PubMed, Medline, Lilacs, SciELO, IBECS, and PEDro databases) published between 2020-2023. The patients selected for analysis were adults with one year of post-therapy follow-up.

RESULTS

According to the latest researches, it is recommended to implement stretching exercises, exercises with low to moderate burden, as well as aerobic activities (swimming, walking and stationary cycling) and massage (in the more advanced stages). It has to be pointed out that aerobic and resistance exercises are appropriate for the initial and middle stages of the disease and for slow-progressing cases. They should be started at the earliest opportunity and should be maintained at a submaximal level. In addition, respiratory therapy can improve lung function and breathing (expectoration techniques, and when the vital capacity decreases to less than 50% of the predicted, the patient is placed on mechanical ventilation).

Moderate-intensity exercise increases synaptogenesis and dendritic branching in multiple brain regions, as well as neurotrophic factor production. Also, physical therapy promotes increased hypertrophy of skeletal muscle fibers, muscle protein synthesis and increased capillary density.

The most recent data is reduction in the level of serum Myo-miRNA (biomarker for monitoring disease progression) after six weeks of rehabilitation, which is due to the stabilization of the skeletal muscles and the neuromuscular junction. All this leads to more optimal activation and synchronization of the motor units.

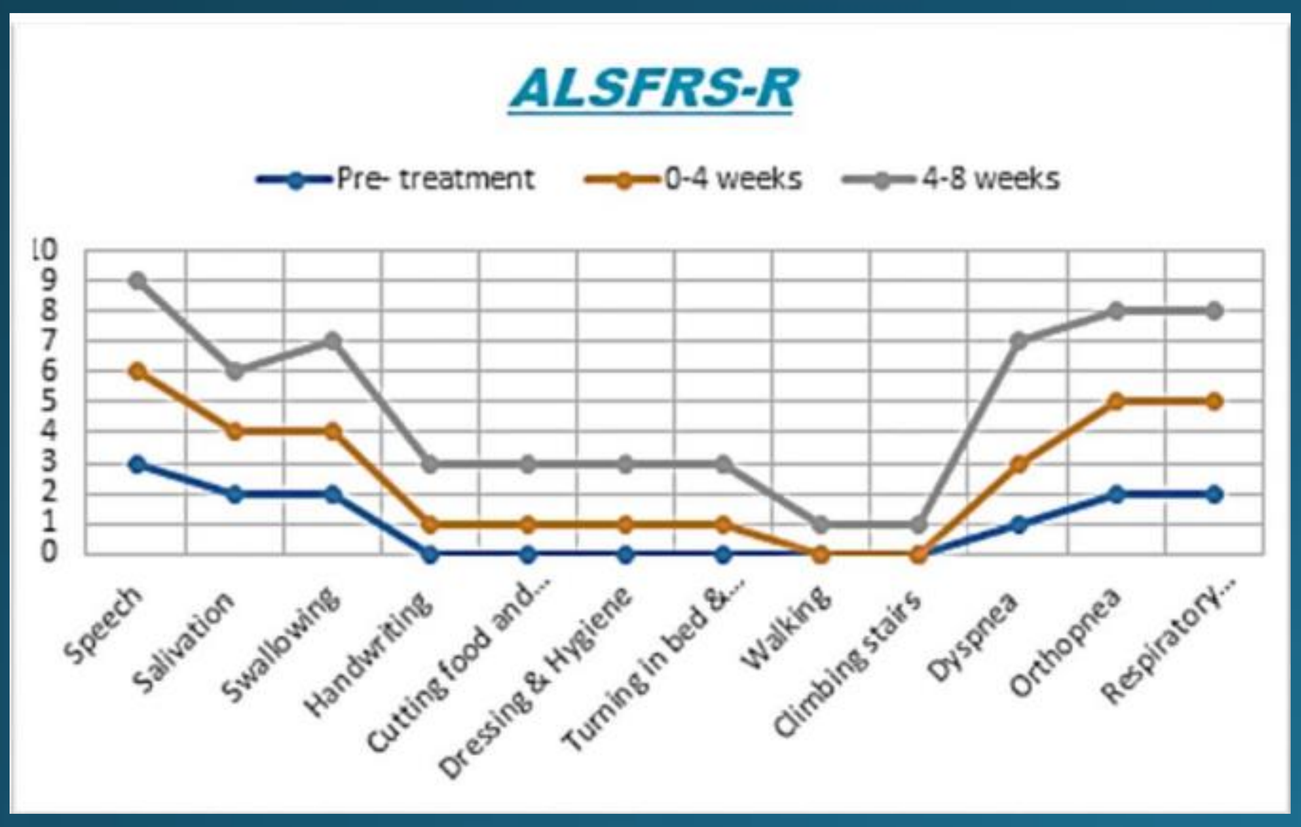

Fig. 1 - ALSFRS-R examines the functional status of patients.

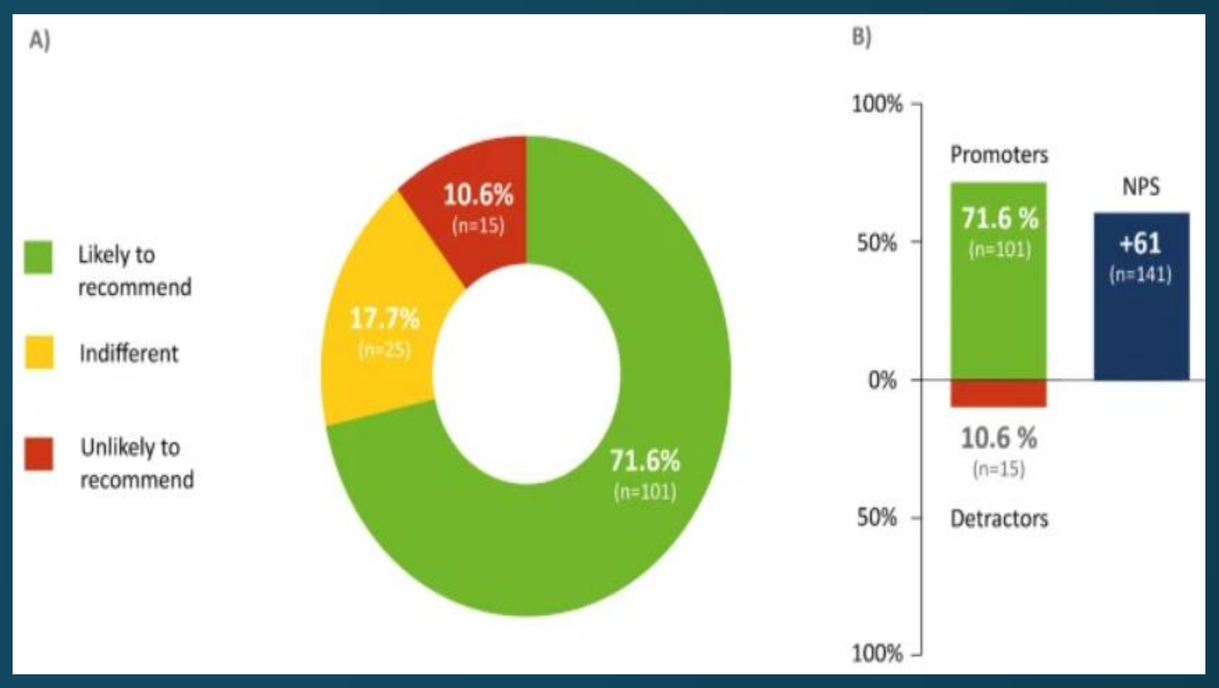

Fig. 2 - Likelihood of recommending a motor-assisted movement exerciser (MME).

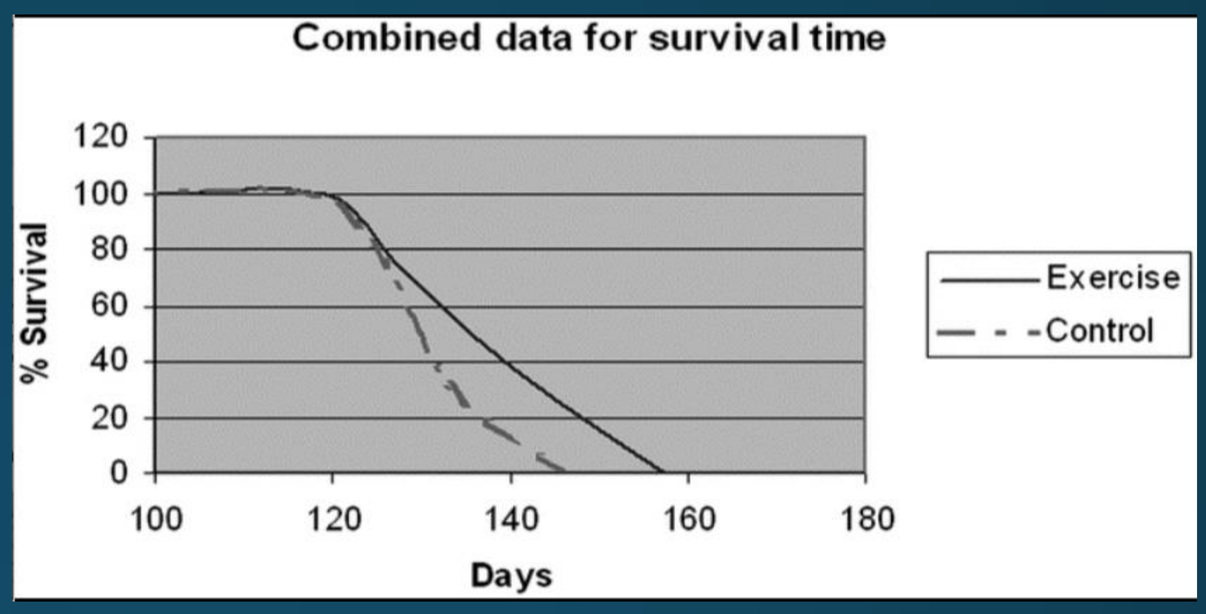

Fig. 3 - Combined survival curves. The median life span for the exercise groups was increased by six days compared with the control groups (median life span = 130 days).

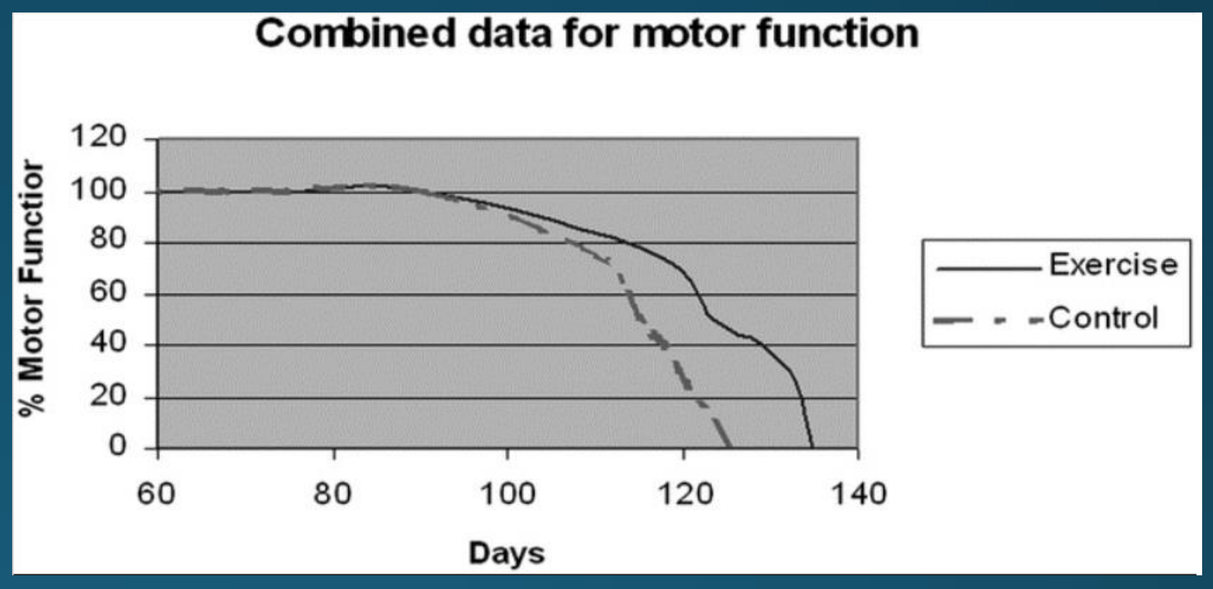

Fig.4 - Combined data for change in motor function over time in animal studies. The time to reach 50% decline in motor function was 122 days for the exercise groups compared with 115 days for the control groups.

CONCLUSION

Physical therapy has been shown to be essential in improving the quality of life of ALS patients and adapting to changes in daily functioning. The goals are: reducing pain, maintaining condition, flexibility, safe mobility and independence for as long as possible.

ALS

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INITIAL STAGE

ADVANCED STAGE