Oral Communication
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Aquatic Training in People With DM1: Effect on Muscle Strength, Functional Capacity, and Quality of Life

Topic: Exercise

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BACKGROUND

Myotonic Dystrophy Type 1 (DM1), also known as Steinert disease, is the most common form of muscular dystrophy in adults. DM1 is clinically characterized by a progressive decline in muscle strength during adolescence and adulthood, leading to a reduction in functional capacity. The management of DM1 primarily relies on conservative, non-pharmacological interventions, such as strength and aerobic training. Aquatic exercises are commonly incorporated into rehabilitation programs, as people with neuromuscular disease benefit from water immersion to reduce the impact of gravity and thus facilitate movement. To date, the effects of structured aquatic training have not yet been reported in individuals with DM1. The aim of this pilot study was to evaluate the impact of aquatic training on muscle strength, functional capacity and quality of life in adults with DM1.

METHODS

Twenty-two adults with DM1 were randomly assigned to either aquatic training group (Aqua grp) or over-ground training group (Ground_grp). All participants underwent two 1-hour training sessions per week for 12 weeks. The same exercises were implemented for both groups, but the intensity was adjusted to the training modality based on participants capacities. Each training session included a 30-minute period dedicated to resistance training, followed by 15 minutes of ball passing game. Each training session started by a warmup period, i.e., joint mobilization, and ended by a cooldown stretching period. The following measurements were done before and after the training period: Walking endurance (6MWT), muscle strength (manual muscle testing), time up and go, Quality of life (SF-36), and life habits (MHAVI).

RESULTS

The distance walked during the 6MWT was not significantly different after trainng. Shoulder flexion, extension, adduction, abduction, internal rotation and external rotation, as well as knee and ankle flexion extension strength increased in the Aqua_grp ($p < 0.05$). Only, shoulder abduction strength increased significantly in the Ground_grp. Performance at TUG test increase solely in the Aqua_grp ($p < 0.05$). SF-36 score increased in both groups after training, but significantly more in the Aqua_grp compared to Ground_Grp ($p < 0.05$).

CONCLUSION

Aquatic and over-ground training resulted in quality-of-life improvement in people with DM1. Aquatic training seems more efficient than over-ground training to improve muscle strength and functional capacity in this population. Further studies are needed to confirm these promising results.

Statement of Disclosures

None

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