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EVALUATION OF EARLY REHABILITATION MEASURES IN DUCHENNE MUSCULAR DYSTROPHY

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Abstract:Duchenne muscular dystrophy (DMD) is a severe genetic disorder resulting from mutations that impair dystrophin production, leading to progressive muscle degeneration. This study evaluated the effectiveness of early rehabilitation interventions among DMD patients at the Genesis Mother and Child Clinic in Fergana during 2024–2025. The results demonstrated that a comprehensive rehabilitation program significantly improved muscle function and quality of life in affected children.

Keywords: Duchenne muscular dystrophy, early rehabilitation, physiotherapy, respiratory therapy, orthotic support.

Introduction

Duchenne muscular dystrophy (DMD) is the most common inherited neuromuscular disorder in children, predominantly affecting males. The absence of dystrophin leads to muscle instability, progressive weakness, and premature mortality. Early and sustained rehabilitation measures are crucial for maintaining functional abilities and delaying the progression of secondary complications.

Purpose of the Study

To investigate the impact of early rehabilitation interventions on functional status and quality of life in children diagnosed with Duchenne muscular dystrophy.

Materials and Methods

Thirty patients aged 4–7 years with genetically confirmed DMD participated in the study. The rehabilitation program included daily physiotherapy sessions, passive and active stretching, orthotic support (AFO braces), respiratory exercises, and educational seminars for parents. Functional status was evaluated using the North Star Ambulatory Assessment (NSAA) and Forced Vital Capacity (FVC) scores.

Place and Time of the Study

The study was conducted at the Genesis Mother and Child Clinic, Fergana City, Uzbekistan, between 2024 and 2025.

Study Participants

The study included 30 children (25 boys and 5 girls) along with their family members. All participants provided written informed consent prior to inclusion in the rehabilitation program.

Results and Conclusions

Results:

- After six months of rehabilitation, 70% of the participants showed a 2–3 point improvement in NSAA scores.

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- An average 5% increase in Forced Vital Capacity was recorded.
- Orthotic interventions improved ambulatory efficiency by approximately 20%.
- Progression of scoliosis and respiratory insufficiency was notably delayed.

Conclusions:
Early comprehensive rehabilitation interventions in Duchenne muscular dystrophy significantly preserve muscle function, improve quality of life, and delay the development of secondary complications.

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