

Body composition, muscle strength, functional capacity, and physical disability risk in liver transplanted familial amyloidotic polyneuropathy patients

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Abstract: Background: Familial amyloidotic polyneuropathy (FAP) is a neurodegenerative disease leading to sensory and motor polyneuropathies, and functional limitations. Liver transplantation is the only treatment for FAP, requiring medication that negatively affects bone and muscle metabolism. The aim of this study was to compare body composition, levels of specific strength, level of physical disability risk, and functional capacity of transplanted FAP patients (FAPTx) with a group of healthy individuals (CON).

Methods: A group of patients with 48 FAPTx (28 men, 20 women) was compared with 24 CON individuals (14 men, 10 women). Body composition was assessed by dual-energy X-ray absorptiometry, and total skeletal muscle mass (TBSMM) and skeletal muscle index (SMI) were calculated. Handgrip strength was measured for both hands as was isometric strength of quadriceps. Muscle quality (MQ) was ascertained by the ratio of strength to muscle mass. Functional capacity was assessed by the six-minute walk test.

Results: Patients with FAPTx had significantly lower functional capacity, weight, body mass index, total fat mass, TBSMM, SMI, lean mass, muscle strength, MQ, and bone mineral density.

Conclusion: Patients with FAPTx appear to be at particularly high risk of functional disability, suggesting an important role for an early and appropriately designed rehabilitation program.

Key words: bone mass – familial amyloidotic; polyneuropathy – liver transplant – muscle; quality – physical disability risk – six-minute walk; test – skeletal muscle index

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