**Abstract**

**INTRODUCTION:** Particular fibroadipose infiltration patterns have been recently described by muscle imaging in congenital and later-onset forms of LMNA-related muscular dystrophies (LMNA-RD).

**METHODS:** Scores for fibroadipose infiltration of 23 lower limb muscles in 34 patients with LMNA-RD were collected from heatmaps of two previous studies. Scoring systems were homogenized. Relationships between muscle infiltration and disease duration and age of onset were modeled with random forests.

**RESULTS:** The pattern of infiltration differs according to disease duration, but not to age of disease onset. The muscles whose progression best predicts disease duration were semitendinosus, biceps femoris long head, gluteus medius and semimembranosus.

**DISCUSSION:** In LMNA-RD, synthetic analysis of lower limb muscle infiltration did not find major differences between forms with different ages of onset, but allowed the identification of muscles with characteristic infiltration during disease progression. Monitoring of these specific muscles by quantitative MRI may provide useful imaging biomarkers in LMNA-RD. This article is protected by copyright. All rights reserved.

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**KEYWORDS:** LMNA; biomarker; imaging; laminopathy; machine learning; magnetic resonance

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