

Rapamycin Vs. Placebo for the Treatment of Inclusion Body Myositis: Improvement of the 6 Min Walking Distance, a Functional Scale, the FVC and Muscle Quantitative MRI

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SESSION INFORMATION

Date: Tuesday, November 7, 2017

Session Title: ACR Late-Breaking Abstract Session

Session Type: ACR Late-breaking Abstract Session

Session Time: 4:30PM-6:00PM

Background/Purpose:

Inclusion body Myositis (IBM) is the most frequent myositis in patients over 50 years old. Conventional immunosuppressive drugs are today ineffective or even aggravate muscle deficits. Rapamycin is a mTOR inhibitor used in organ transplantation. Potentially, rapamycin can deplete T effector cells, preserve T regulatory cells and induce autophagy (protein degradation), all parameters impaired during IBM.

Methods:

RAPAMI is a prospective, randomized, controlled, double blind, monocentric, phase IIb trial evaluating the efficacy of rapamycin against placebo (NCT02481453). The primary endpoint was stabilization of maximal voluntary quadriceps isometric strength assessed with a dynamometer (Biodex System3 pro). Secondary endpoints included safety, other muscle groups strength, distance walked in 6 minutes (6MWD), pulmonary functional tests, functional scales, and muscle quality assessed by quantitative nuclear resonance magnetic exams (NRM).

Results:

Forty-four patients were treated by oral rapamycin (2 mg/d, n=22) or placebo (n=22) during 12

months (M12). Twelve months after the initiation of the treatment, the quadriceps strength decreased significantly and similarly in both groups (mean relative change: -11.07% vs. -12.36 %). Nevertheless, in comparison to the placebo group, 6MWD was unchanged (mean change: -4.1 m vs. -38.5 m, $p=0.035$), IBM weakness composite index was less degraded (11.91% vs. 24.26%, $p=0.038$) and forced vital capacity significantly improved (mean relative change: +12.3% vs. 1.6%, $p=0.016$). Additionally, NRM showed significant less fat muscle replacement (difference between M12 and baseline in %) in quadriceps (1.7 vs. 4.4, $p=0.025$) or hamstrings (0.9 vs. 7.3, $p=0.027$). Finally in NRM, the loss between M12 and baseline of contractile cross-sectional area (mm^2) was less pronounced in quadriceps (-3.7 vs. -10.7, $p=0.005$).

Conclusion: Even if the primary endpoint was not reached, these first results showed coherent data in favor of rapamycin. Notably for the first time in a RCT, an improvement of the 6MWD is observed during IBM.

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