A Study of the Exercise Effect and Exercise Load Determined Using Perceived Exertion in Patients with the Subacute Phase of Inflammatory Myopathy

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Purpose: The purpose of this study was to examine the exercise effect and exercise load in patients with the subacute phase of inflammatory myopathy.

Methods: We set exercise loads according to the modified Borg scale (BS). Thirteen patients performed exercises that mainly comprised muscle strength and endurance training after 1–6 weeks following the onset of inflammatory myopathy. Muscle training exercises included straight leg raise, hip raise, squat, and calf raise, with the exercise load resulting in muscle fatigue of 2–4 on the BS. Endurance training involved walking or ergometer cycling, with the exercise load resulting in dyspnea of 2–4 on the BS. Subsequently, we investigated the trainable exercise load continuously. Furthermore, we compared muscle strength on knee extension, 6-min walking distance, and creatine kinase (CK) levels before and after exercises.

Result: Of the 13 patients, 10 completed the exercises. Three patients could not complete the exercise because of deterioration of their general condition, increase in CK levels, and muscle pain. Of the 10 patients who completed the exercises, 9 performed moderate load exercises (BS, 4) and 1 patient performed low load exercises (BS, 2) because of arrhythmia and muscle pain. No increase in CK levels were observed in these 10 patients. Further, no significant improvements were observed in knee-extension strength, but the 6-min walk distance significantly improved after exercises compared to that before the exercises (p < 0.05).

Conclusion: Our results indicate that patients with subacute inflammatory myopathy should initially perform low load exercises, and subsequently, the load should be set depending on individual conditions while simultaneously checking for myalgia and CK levels, and improvement in strength. The careful monitoring of load during muscle training is important. In contrast, endurance levels improve after training with moderate load if patients have a stable condition.