Clinical perspective for wasting in diaphragm, an ever-trained muscle

Dear Editor,

We read with great interest the recent article comparing the mechanisms under muscle wasting in quadriceps and diaphragm using an animal model by Mangner et al.1 While muscle wasting in heart failure (HF) patients is associated with poor exercise capacity and prognosis, current clinical evidences in therapeutic approach have been limited to ones by exercise training.2,3 As the author referred in their introduction, however, the function in diaphragm may be impaired in HF even though HF may induce ‘training-like’ benefit on diaphragm. This notion suggests that there may be some possible mechanisms other than deconditioning under wasting in diaphragm, and the results in this article would be one of them, namely, lack of elevation in oxidative enzyme activity in diaphragm.1 Besides, malnutrition may disrupt the effect of exercise training,4 and anabolic hormone may be insufficient in some patients.5 In a recent clinical research,6 the prognostic impact of respiratory muscle wasting was not consistent with the results from studies in 1990s,7,8 suggesting heterogeneity in the significance of respiratory muscle wasting in HF patients, which may not have been observed in animals. In limb muscle on the other hand, deconditioning may prevalently exist under wasting and attenuate the heterogeneity in the prognostic significance of wasting. Taken together, much more evidence will be needed until we can estimate if respiratory muscle wasting would be an important therapeutic target in HF patients.

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