As a limitation to the present observation, it should be noted that some PPCM patients recover spontaneously (1). Therefore, a controlled randomized study is needed in order to determine the true value of bromocriptine as a specific novel therapy for PPCM.

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Letters to the Editor

Exercise in Chronic Heart Failure: Does it Need to Be “Anti-Remodeling”?

From their analysis, Haykowsky et al. (1) conclude that combined aerobic and strength training provides no anti-remodeling benefit in patients with chronic heart failure (CHF). The fact that the latter studies all date from the last 5 years is not highlighted. Systematic prescription of beta-blockers in recent trials might have obscured additional anti-remodeling effects of combined exercise training.

The relevance attributed to the 3% increase in left ventricular ejection fraction in the accompanying editorial is surprising (2). Patients treated with cardiac resynchronization therapy (CRT) would typically be classified as nonresponders based on this modest improvement. Furthermore, increased blood pressure is called upon by Haykowsky et al. (1) to explain the lack of anti-remodeling effects of combined exercise training. In fact, McKelvie et al. (3) showed a lower rate-pressure product when patients with CHF performed leg press versus aerobic cycling at comparable exercise intensity. Finally, Rubin (2) mentions being unaware of exercise training studies in CRT-treated patients. We recently showed that the combination of endurance training with CRT is highly effective in terms of exercise capacity (4).

Endurance training in patients with CHF concentrates on peak exercise capacity and apparently also provides modest anti-remodeling effects (1). However, disabled CHF patients are also likely to benefit from dynamic resistive exercise. To a large extent, quality of life in this population depends on engagement in daily life activity, which does not demand peak aerobic performance.

Table 1  
Time Course of NYHA Functional Class, NT-proBNP Levels, and Echocardiographic Data of Cases 1 and 2

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NYHA functional class</strong></td>
<td><strong>Baseline</strong></td>
</tr>
<tr>
<td>III</td>
<td>10,611</td>
</tr>
<tr>
<td>IV</td>
<td>60</td>
</tr>
<tr>
<td>LVESD (mm)</td>
<td>53</td>
</tr>
<tr>
<td>Fractional shortening (%)</td>
<td>12</td>
</tr>
<tr>
<td>Ejection fraction (%)</td>
<td>17</td>
</tr>
<tr>
<td>Heart rate (beats/min)</td>
<td>123</td>
</tr>
</tbody>
</table>

LVEDD = left ventricular end-diastolic diameter; LVESD = left ventricular end-systolic diameter; n.d. = not determined; NT-proBNP = N-terminal pro-brain natriuretic peptide; NYHA = New York Heart Association.

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Pulling, pushing, and lifting require skeletal muscle mass and strength of both upper and lower limbs. To rule out dynamic resistive exercise for patients with CHF on the basis of “no known” anti-remodeling effect and without the demonstration of harm would limit initiatives to adequately assess the possible value of this particular training modality.

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Reply

We thank Dr. Conraads and colleagues for their interest in our meta-analysis. They attribute the lack of positive effects of combined aerobic and strength training reported in our review (1) to greater rates of beta-blocker prescription in the more recent trials of combined training. However, although we agree that beta-blockers have a positive effect on reverse ventricular remodeling, overall prescription rates of beta-blockers were not greater in the trials examining combined training (combined: 31% vs. other trials 44%).

Dr. Conraads and colleagues are correct that the rate–pressure product is lower during leg press exercise versus cycle exercise when performed at the same relative exercise intensity (2). However, the rate–pressure product is not an appropriate measure of left ventricular wall stress (i.e., ventricular pressure multiplied by ventricular radius of curvature divided by ventricular wall thickness), which is an important stimulus for ventricular remodeling (3). We disagree with the implication of Dr. Conraads and colleagues that reverse remodeling is unimportant. An international consensus statement reinforces that slowing or reversing ventricular remodeling is clinically important and essential to prevent the progression of heart failure (4). We also disagree that resistance training should be recommended to heart failure patients based on current evidence. We reiterate that our meta-analysis supported the efficacy of aerobic training on reverse ventricular remodeling and should be the choice of exercise training for clinically stable individuals with heart failure and impaired left ventricular systolic function for whom prevention of heart failure progression is a priority.

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