Why does chronic heart failure cause breathlessness and fatigue?

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Abstract

Traditional explanations for the symptoms of fatigue and breathlessness experienced by patients with chronic heart failure (CHF) focus on how reduced cardiac output on exercise leads to impaired skeletal muscle blood supply, thus causing fatigue, and on how the requirement for a raised left ventricular filling pressure to maintain cardiac output results in reduced pulmonary diffusion owing to interstitial edema, thus causing breathlessness. However, indices of left ventricular function relate poorly to exercise capacity and symptoms, suggesting that the origin of symptoms may lie elsewhere. There is a specific heart failure myopathy that is present early in the condition which may contribute largely to the sensation of fatigue. Receptors present in skeletal muscle sensitive to work (ergoreceptors) are overactive in patients with CHF, presumably as a consequence of the myopathy, and their activity is related both to the ventilatory response to exercise and breathlessness, and to the sympathetic overactivity of CHF. In the present paper, we review the systemic consequences of left ventricular dysfunction to understand how they relate to the symptoms of heart failure.

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