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Obstructive sleep apnoea in patients with dilated cardiomyopathy: effects of continuous positive airway pressure.

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The combined effects of negative intrathoracic pressure swings during obstructive sleep apnoeas (OSAs) and increased sympathetic nervous system tone associated with hypoxia and sleep arousal may lead to pulmonary oedema or left-ventricular hypertrophy. Therefore, we have done a study of patients with congestive heart failure secondary to idiopathic dilated cardiomyopathy to see whether OSA could contribute to impaired left-ventricular function and to assess nasal continuous positive airway pressure (NCPAP) for treatment. Eight men (aged 29-69 years) took part in the study; all were obese. Left-ventricular ejection fraction (LVEF) was measured while on stable medication and then 4 weeks after the start of nocturnal NCPAP. NCPAP was associated with abolition of OSA (mean [SE] number of apnoeas and hypopnoeas per hour of sleep 54.1 [7.2] and 1.0 [0.4] for pretreatment and NCPAP nights, respectively, p less than 0.0001). Mean (SE) LVEF increased from 37 (4)% pretreatment to 49 (5)% after four weeks' NCPAP therapy (p less than 0.0001). Withdrawal of NCPAP for 1 week in four patients was associated with a reduction in LVEF from 53 (6)% to 45 (5)% (p less than 0.001). OSA may contribute to impaired left-ventricular function in some patients with dilated cardiomyopathy of otherwise unknown origin, and reversal of OSA by NCPAP can lead to significant improvement in LVEF.