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Abnormal impedance cardiography predicts symptom severity in chronic fatigue syndrome.

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BACKGROUND: Findings indicative of a problem with circulation have been reported in patients with chronic fatigue syndrome (CFS). We examined this possibility by measuring the patient's cardiac output and assessing its relation to presenting symptoms. METHODS: Impedance cardiography and symptom data were collected from 38 patients with CFS grouped into cases with severe (n = 18) and less severe (n = 20) illness and compared with those from 27 matched, sedentary control subjects. RESULTS: The patients with severe CFS had significantly lower stroke volume and cardiac output than the controls and less ill patients. Postexertional fatigue and flu-like symptoms of infection differentiated the patients with severe CFS from those with less severe CFS (88.5% concordance) and were predictive ($R2 = 0.46$, $P < 0.0002$) of lower cardiac output. In contrast, neuropsychiatric symptoms showed no specific association with cardiac output. CONCLUSIONS: These results provide a preliminary indication of reduced circulation in patients with severe CFS. Further research is needed to confirm this finding and to define its clinical implications and pathogenetic mechanisms.

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