Reviewer’s report

Title: Clinical Treatment Reverses Attentional Deficits in Congestive Heart Failure

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Reviewer: Dr Edward Havranek

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Accept after revision, which I do not need to see

The authors report the results of a study of cognitive function in patients with heart failure. They confirm the results of previous studies demonstrating such deficits, and demonstrate improvement in cognitive function in parallel with improvement in heart failure clinical status. The study utilizes appropriate tests, particularly the cognitive subsection of the Cambridge Mental Disorders of the Elderly Examination. Both the experimental and control groups appear to be appropriate for the study's stated purposes. Although I am not an expert in statistics, the statistical analysis appears to me to be appropriate. The study includes interesting but preliminary data on changes in cerebral blood flow in the heart failure patients.

The authors rightly point out the limitations of their study. Their failure to retest the control group is a moderate weakness. Although the magnitude of a learning effect is unlikely to be as great as the changes seen in the study, this should have been demonstrated. The study design does not allow us to distinguish between cognitive deficits resulting from circulatory dysfunction and cognitive deficits resulting from comorbidities. This is perhaps clinically not all that important, since treatment of heart failure was associated with improvement in cognitive function. I would, however, like to see the paper explicitly acknowledge the likely contribution of alcohol abuse to the study's findings. Patients with a history of alcohol abuse were probably over-represented in the heart failure group, and alcohol abuse can be a cause of both cardiomyopathy and dementia. Likewise, hypertension and diabetes are associated with both increased incidences of heart failure and cerebrovascular disease; the cerebrovascular disease may in turn be associated with clinically covert cerebral infarctions.

In addition to the possible implications for compliance, morbidity, and mortality, the authors might point out the implications for obtaining informed consent in patients with advanced heart failure, since such patients may be candidates for experimental therapies and high risk interventions such as cardiac transplantation.

Competing interests:

None declared.