Abstract:

Clinical benefit of assessing cognitive function in frail patients with heart failure: a multicenter prospective cohort study

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On behalf: FLAGSHIP collaborators

Topic(s):
Chronic Heart Failure: Comorbidities

Citation:

Funding Acknowledgements:
This work was supported by a Grant-in-Aid for Scientific Research (A) from the Japan Society for the Promotion of Science [16H01862].

Background: Cognitive decline is highly prevalent in patients with heart failure (HF) and increases the risk of hospital readmission or mortality due to poor self-care ability. Although cognitive decline often coexists with physical frailty (PF) in HF, the clinical utility of combined assessment of both cognitive function and PF remains unclear.

Purpose: The aim of this study was to examine the prognostic value of assessing cognitive function and PF in patients with HF.

Methods: This prospective study was performed as a multicenter cohort study in Japan (FLAGSHIP). We enrolled 1611 patients admitted for acute HF or exacerbation of chronic HF and who were able to walk at discharge. Patients with severe dementia [Mini-Mental State Examination (MMSE) scores <18], severe psychological disorders or less than 6-month life expectancy were excluded. From data at discharge, we collected data on cognitive function, PF, age, gender, New York Heart Association class, left ventricular ejection fraction, brain natriuretic peptide, estimate glomerular filtration rate, hemoglobin, depression (5-item geriatric depression scale =2) and comorbidities, including atrial fibrillation, diabetes mellitus, stroke, and hyponatremia. PF was defined as ≥2 of the followings based on our previous publication: usual walking speed <0.8 m/s; grip strength <26 kg (men) or <17 kg (women); Performance Measure of Activity in Daily Living-8 =21; body mass index <20 kg/m². Cognitive function was assessed by MMSE. We selected the optimal cutoff point of MMSE that predict a worse outcome by the receiver operating characteristic (ROC) curve analysis. Study outcome was a composite outcome of rehospitalization for worsening HF or all-cause mortality within 2 years after discharge. We used Cox proportional-hazard models to examine the association between the presence of cognitive decline and PF and 2-years prognosis, controlling for potential confound factors.

Results: A total of 507 events (31.5%) were observed (400 HF rehospitalization, 27 cardiac death, 80 non-cardiac death). The optimal cutoff point of MMSE was 28 (the area under the ROC curve: 0.58, p<0.01, sensitivity: 71.0%, specificity: 41.0%). There was a significant difference in event-free survival across the groups stratified by cognitive decline (MMSE <28) and PF (Figure). After adjusting for all variables, coexistence of both cognitive decline and PF was independently associated with 2-years prognosis (hazard ratio: 1.52, 95% confidence interval: 1.19-1.94).

Conclusion: Our data shows that even a slight decline in cognitive function leads to an increased risk of death or HF rehospitalization in frail patients with HF. Combined assessment both cognitive function and PF improves
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Conclusion: Our data shows that even a slight decline in cognitive function leads to an increased risk of death or HF rehospitalization in frail patients with HF. Combined assessment both cognitive function and PF improves risk stratification for readmission and mortality in patients with HF.

Figure: Kaplan Meier survival curves for event-free survival

<table>
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<tr>
<th>Group</th>
<th>Number at risk</th>
<th>Months</th>
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<tr>
<td>Group A</td>
<td>546</td>
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Log rank test p<0.01