Prognostic role of fragility detection in a heart failure clinic using the vulnerable elderls survey scale 13 (VES-13) and a multimodality assessment


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Background: Fragility has repeatedly proved to play a significant prognostic role in HF patients. We recently reported that the Vulnerable Elderls Survey scale 13 (VES-13) was useful and even showed a higher sensitivity for detecting fragility in outpatients with heart failure (HF) than a multimodality assessment used for many years in our Heart Failure Clinic. Concordance between VES-13 and the multimodality assessment was superior to 80%, but Cohen's Kappa did not reach the suitable level of 0.70.

Purpose: To assess which of the two approaches (VES-13 scale and a multimodality assessment that includes Barthel index, OARS scale, Pfeiffer test, and abbreviated Yesavage Geriatric Depression Scale of 4 items [GDS]) is superior from the prognostic point of view.

Methods: Nurses fulfilled the scales with the patients at their first visit. Patients with a scoring ≥3 in the VES-13 scale and the presence of one of the predefined criteria in the multimodality assessment (Barthel <90; OARS score <10 in women and <6 in men; Pfeiffer Test score >3 ± 1, depending on educational level; one positive depression response in abbreviated GDS; and age >85 years or nobody to turn to for help) were considered to have fragility for the purpose of the study. All-cause mortality and the composite of all-cause death or HF hospitalization were the analysed end-points.

Results: From March 2021 to December 2021, 172 patients were evaluated with the two fragility screening modalities (mean age 69.1 ± 11.4 years, 64% men, 42.4% from ischaemic aetiology, 66.9%/26.2% in NYHA class II/III, LVEF 40.3% ± 13.9). VES-13 identified 68 (39.5%) patients with fragility, while the multimodality assessment detected 61 (35.5%) patients. During a mean follow-up of 15.8 ± 4.8 months, 22 patients (12.8%) died, 18 (10.5%) had at least one HF hospitalization and 37 suffered the composite end-point of all-cause death or HF hospitalization (21.5%). In Cox regression analyses fragility detected by both approaches showed similar prognostic value for all-cause mortality (HR 2.89 [1.24-6.77], p=0.014) using the multimodality approach vs. (HR 2.89 [1.21-6.89], p=0.017) using the VES-13 scale. However, fragility detected by the VES-13 scale revealed to be a more powerful prognostic tool for the composite end-point (HR 2.90 [1.49-5.64], p=0.002) than the multimodality approach (HR 1.47 [0.77-2.81], p=0.248).

Conclusions: Fragility detected both by the VES-13 and by a multimodality approach showed similar prognostic role for all-cause mortality, but VES-13 showed a higher stratification capacity for the composite end-point of all-cause death or HF hospitalization. Nevertheless neither of the two approaches is actually a prognostic tool. It is necessary to perform a complete geriatric assessment to identify the grade of fragility, the possible prognostic impact and the best intervention to improve outcomes and quality of life.