The importance of evaluation for living alone among acute myocardial infarction patients

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Background: Assessment of the mortality risk in acute myocardial infarction (AMI) patients is crucial when making medical decisions because AMI is an important public health issue and a major cause of death worldwide. The Global Registry of Acute Coronary Events (GRACE) risk score is useful for estimating in-hospital mortality at the time of admission and is in wide use. On the other hand, in the rapidly aging societies of the modern era, social isolation and absence of support are important welfare issues. Among them, living alone as a proxy for social isolation has been considered to increase the risk of cardiovascular disease.

Purpose: The purpose of this study was to investigate the association between living alone and cardiac deaths in AMI patients after percutaneous coronary intervention (PCI), and to determine whether this association was independent of GRACE risk score as a score that is widely used in clinical settings.

Methods: This study was a retrospective cohort study, investigating 277 consecutive AMI patients who underwent successful revascularization of the culprit lesion by primary PCI. Associations between cardiac deaths after PCI and baseline characteristics including living alone and GRACE risk score were assessed. Furthermore, this study also assessed nutritional status using the Geriatric Nutritional Risk Index (GNRI).

Results: Median duration of follow-up was 1153 days (IQR, 560–1566 days). In this population, median age was 69 years (IQR, 59–77 years), and 198 patients (71%) were male. Eighty-three patients (30%) were living alone. Thirty patients died after PCI, including 20 cardiac deaths. Patients living alone showed higher incidences of cardiac deaths compared with patients not living alone (14% vs. 4%, p=0.004). The proportion of males differed significantly between living alone and not living alone groups (p=0.004). GNRI was significantly lower in the living alone group than in the not living alone group (p<0.001 and p=0.048). GRACE risk score was significantly higher in the living alone group (median, 140; IQR, 107–170) than in the not living alone group (median, 127; IQR, 103–149; p=0.038). Multivariate Cox proportional hazards regression analysis models showed living alone (hazard ratio [HR], 4.17; 95% confidence interval [CI], 1.60–10.84; p=0.003), GNRI (HR, 0.94; 95%CI, 0.91–0.98; p=0.003), and GRACE risk score (HR, 1.03; 95%CI, 1.01–1.04; p<0.001) were significantly associated with cardiac death after PCI. A comparison of p values for the interaction of GRACE risk score and either living alone and GNRI were p=0.082 and p=0.244, respectively.

Conclusions: The current study revealed that living alone represents an independent risk factor for cardiac deaths in AMI patients after PCI, separate from GRACE risk score. Evaluation of living arrangements may provide more information regarding prognosis for AMI patients.