

Effectiveness of nurse-led hospital-based heart failure programmes in octogenarians and nonagenarians: is age important?

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Background: Efficacy of HF programmes in oldest old (octogenarians and nonagenarians) has not been fully explored.

Methods: We conducted a natural experiment evaluating all patients after hospitalization for heart failure as primary diagnosis between January 2017 and January 2019. We compared outcomes between patients discharged during Period #1, before the implementation of the program with patients discharged during Period #2, after the implementation of the 7-step bundle of interventions. We explored the interaction between age group (<80 vs. ≥80 years old) by the intervention modality (HF programme vs. usual care). Primary end-point was the combined end-point of all-cause death or all-cause hospitalization at 6 months after discharge from the index hospitalization.

Results: The study enrolled 440 patients. Mean age of the whole cohort was 75±9 years. In the oldest old subgroup (n=160), mean age was 84±3. No differences were found in baseline characteristics of patients between usual care and HF program. 30-day all-cause readmission was significantly reduced in patients in the HF programme group compared to patients in the usual care group in both age strata. In unadjusted Cox regression analyses in the oldest old group, management of patients in the HF programme was significantly associated with a reduction in the risk of the primary end-point (HR: 0.50; 95% CI [0.29–0.85]; p=0.011).

Conclusions: Management of patients in a nurse-led integrated care-based heart failure programme results in reduction of all-cause death or all-cause hospitalizations in oldest old patients.

Impact of HF program vs usual care

	Patients <80 years old		Patients ≥80 years old		†p-value interaction
	*Hazard Ratio (95% CI)	p-value	*Hazard Ratio (95% CI)	p-value	
Primary Endpoint					
All-cause death or all-cause hospitalization	0.39 (0.21–0.52)	<0.001	0.54 (0.29–0.97)	0.04	0.513
Secondary Endpoints					
HF hospitalization	0.22 (0.12–0.40)	<0.001	0.23 (0.11–0.48)	<0.001	0.711
CV hospitalization	0.25 (0.14–0.42)	<0.001	0.24 (0.12–0.48)	<0.001	0.719
All-cause hospitalization	0.36 (0.22–0.47)	<0.001	0.54 (0.29–0.97)	0.041	0.419
All-cause death	0.45 (0.04–5.64)	0.534	0.03 (0.00–100)	0.938	0.761
All-cause death or CV hospitalization	0.27 (0.16–0.45)	<0.001	0.30 (0.15–0.60)	0.001	0.745
All-cause death or HF hospitalization	0.25 (0.14–0.43)	<0.001	0.25 (0.12–0.52)	<0.001	0.756

*Comparison of nurse-led HF Program vs. Usual Care (reference category). †Adjusted P-value for the interaction term [CKD vs. No CKD] by intervention modality [HF programme vs. Usual care]. **Unadjusted P-value for the interaction term [CKD vs. No CKD] by intervention modality [HF programme vs. Usual care].

