Cardiac Structure and Function and Mortality in the Oldest Old

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Background: People over the age of 85 are the world's most rapidly growing age group and have a high incidence of cardiovascular mortality. The prognostic significance of abnormalities in cardiac structure and function in this age group is unclear. The objective of this study was to prospectively determine the prognosis of abnormal cardiac structure and function in an age-homogenous, community-dwelling population of subjects born in 1920-1921.

Methods: Subjects were recruited from the Jerusalem Longitudinal Cohort Study. Echocardiography was performed with a portable echocardiograph at the subjects place of residence. Standard echocardiographic assessment of cardiac structure and function was performed. 5-year mortality was assessed via a centralized government database.

Results: 502 subjects (235 males, 267 females) were enrolled in the study of whom 107 (21%) died at the time of 5-year follow-up. Subjects who died had significantly higher left atrial volume index (LAVI) (42.3 ± 16.5 mL vs. 36.6 ± 12.5 mL; $p < 0.01$), and left ventricular mass index (LVMI) (133.1 ± 47.6 vs. 119.8 ± 30.6 g/m2; $p < 0.05$). Ejection fraction was significantly lower in subjects who died (52.5 ± 11.5% vs. 56.4 ± 9.4%; $p < 0.003$) however, indices of diastolic function were not significantly different between the two groups (E:e' 13.0 ± 5.3 vs. 12.2 ± 4.9; $p = 0.18$). these findings remained significant after correction for possible confounders.

Conclusions: Elevated LAVI and LVMI and decreased systolic function predict 5-year mortality in a community-dwelling population of the oldest old Diastolic dysfunction did not predict 5-year mortality in this cohort