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Clinical characteristics and long-term outcome in patients with helicopter-transported acute coronary syndrome after primary percutaneous coronary intervention

N. Takahashi¹, M. Ogita¹, S. Tsuboi¹, R. Nishio¹, K. Yasuda¹, M. Takeuchi¹, T. Iso¹, T. Sonoda¹, S. Yatsu¹, H. Wada¹, T. Shiozawa¹, T. Dohi², Y. Yanagawa³, S. Suwa¹, H. Daida²

¹Juntendo University Shizuoka Hospital, Cardiology, Izunokuni, Japan; ²Juntendo University Graduate School of Medicine, Cardiovascular Medicine, Tokyo, Japan; ³Juntendo University Shizuoka Hospital, Acute critical care medicine, Izunokuni, Japan

Background: Reducing delay to percutaneous coronary intervention improves functional outcome and reduces long-term mortality. Transportation by helicopter is often quicker than ground transport and thus may improve overall prognosis through reduced ischemic injury and infarction size. Our hospital is located on the medically-depopulated peninsula surrounded by mountain. The journey from the southern tip of the peninsula to the critical care medical center of our hospital take 1.5 hour by a ground ambulance but only 15 minutes by helicopter.

We compared the clinical characteristics and long-term mortality between air and ground transport of ACS patients for primary PCI.

Methods: We conducted an observational cohort study evaluating 2324 patients (mean age 68.5±12.0, male 75.2%) with ACS underwent primary PCI between April 2004 and December 2017 at our hospital.

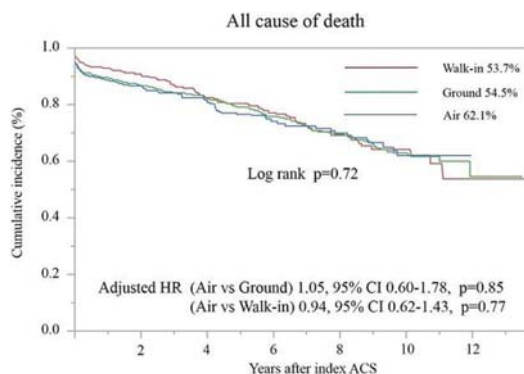
We divided into three groups according to transportation system type (air, ground, walk-in).

The primary outcome was defined as all-cause death during the long-term follow-up.

Results: Among the entire cohort, 577 patients (24.8%) were transported by air. 1326 (57.1%) patients by ambulance, 421 (18.1%) patients by walk. Baseline characteristics were comparable, but patients by air had a higher prevalence of ST-elevation myocardial infarction.

The rate of long-term mortality was comparable during the median follow up of 6 years (air, 21.1% vs. ground, 21.4% vs. walk-in, 21.1%, respectively, log-rank p=0.72). Multivariate Cox regression analysis showed no significant association between air transportation and long-term mortality (Adjusted HR [vs ground] 1.05, 95% CI 0.60–1.78, p=0.85 and [vs walk-in] 0.94, 95% CI 0.62–1.43, respectively, p=0.77).

Conclusions: The rate of long-term mortality in patients with ACS transported by air was comparable with those transported by ground.



Multivariate model adjusted for age, sex, hypertension, diabetes, chronic kidney disease, current smoking, prior MI, Killip Class, multivessel disease, statin use.

Kaplan-Meier curve