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Age-specific differences in the functional recovery of elderly patients after cardiac surgery with postoperative physical therapy

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【Purpose】 The aim of this study is to reveal the age-specific differences in the functional recovery of elderly patients after cardiac surgery.

【Methods】 We retrospectively reviewed the medical records of 103 elderly patients (≥ 60 years) who underwent coronary artery bypass grafting and/or valve replacement with postoperative physical therapy at our hospital between July 2011 and June 2014. Subjects were divided by age into groups A (60-69 years), B (70-79 years), and C (≥ 80 years). Postoperative functional recovery was assessed by the number of days before the patients started sitting (D-sit) or walking (D-walk-onset) and the number of post-operative days when patients achieved walking 100 m unassisted (D-walk-100). Preoperative nutritional status was assessed using the Geriatric Nutritional Risk Index (GNRI) and the Prognostic Nutritional Index (PNI).

【Results】 The mean D-walk-100 of group C was significantly shorter than that of group A and B ($p=0.02$), whereas the mean D-sit and D-walk-onset values were comparable among groups. The mean GNRI score was significantly lower in group C than in group A ($p=0.02$). The PNI score was also significantly lower in group C than in groups A and B ($p=0.01$). A negative correlation was observed between mean D-walk-100 and GNRI score in group C.

【Discussion】 This study revealed that recovery of walking capacity was delayed in patients ≥ 80 years of age after cardiac surgery treated with postoperative physical therapy. Severe preoperative malnutrition is well known to affect postoperative wound healing and physical reconditioning. Preoperative malnutrition of the very elderly might contribute to this delay. Further investigations are needed to clarify the mechanisms underlying age-related differences in functional recovery.