The Relation between the Preoperative Nutrition State (Geriatric Nutritional Risk Index) and the Progression of Rehabilitation after Cardiovascular Operation: Verification by Geriatric Nutritional Risk Index

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**Purpose:** The purpose of this study is to determine the relationship between the preoperative nutrition state and the progression of rehabilitation after cardiovascular surgery.

**Methods:** Consecutive 479 patients who underwent an elective cardiovascular surgery (male: 317, female: 162, age: 67 ± 13 years old) were recruited. The patients were classified into four groups according to the severity of preoperative GNRI: Geriatric Nutritional Risk Index. We retrospectively examined the relationship between the severity of preoperative GNRI and the progression of postoperative rehabilitation (the postoperative duration until the patient started sitting, standing, walking and completed 100-m walking without assistance). In addition, we examined whether the severity of preoperative GNRI would become a predictive factor of the delay of progression of postoperative rehabilitation.

**Results:** The high-risk group in preoperative GNRI showed a significantly higher ratio of patients with chronic heart failure compared with other groups ($p < 0.05$). Moreover, the high-risk group in preoperative GNRI was delayed in the start of standing-up and walking ($p < 0.05$), and also showed a significantly higher ratio of the delay of progression of postoperative rehabilitation ($p < 0.05$). The preoperative GNRI was extracted as one of the predicted factors of the progression of postoperative rehabilitation ($p < 0.001$).

**Conclusion:** The preoperative GNRI has a relation to postoperative progression of rehabilitation after cardiovascular surgery.