Secondary Prevention

The feasibility of a newly developed local network system for cardiac rehabilitation (the CR-GNet) in disease management and physical fitness after acute coronary syndrome

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Background: The newly developed Cardiac Rehabilitation.jpgu Network (CR-GNet) has been implemented to create a regional alliance network and to provide periodic follow-up examinations to enhance the disease management in patients with cardiovascular disease. The effectiveness of a network like this support system has not yet been evaluated in Japan.

Purpose: We aimed to examine the feasibility of the CR-GNet in disease management, assisting patients in attaining physical fitness and its impact on long-term outcomes after acute coronary syndrome (ACS).

Methods: We enrolled 47 patients with ACS in the CR-GNet between February 2016 and September 2019; of these, 37, 29, and 21 patients underwent follow-up assessments for exercise capacity (peak oxygen uptake) at 3 months, 6 months, and 1 year after discharge, respectively. Major adverse cardiac events (MACE) were defined as the composite of death from cardiac causes, cardiac arrest, myocardial infarction, and rehospitalization due to unstable or progressive angina. MACE were compared with controls who were not registered in the CR-GNet.

Results: The coronary risk factors, except blood pressure, improved at 3 and 6 months, and 1 year after discharge. These risk factors in each patient significantly reduced from 2.9 at admission to 1.6, 1.4, and 1.9 at 3 months, 6 months, and 1 year after discharge ($p < 0.05$), respectively. Peak oxygen uptake was significantly higher at 3 months, 6 months, and 1 year after discharge to 17.5 ± 4.9 ml/kg/min, 17.9 ± 5.1 ml/kg/min, and 17.5 ± 5.5 ml/kg/min, respectively, than that at discharge (14.7 ± 3.6 ml/kg/min) ($p < 0.05$). During follow-up, there was no significant difference; MACE did not occur in any patients in the CR-GNet but occurred in controls.

Conclusions: The CR-GNet is a feasible option for long-term management of ACS patients. The prognostic impact of the CR-GNet needs further investigation with a larger sample size and longer follow-up.

Table1

	At admission	3 months	6 months	1 year
Average number	2.9	1.6*	1.4**	1.9*** †

Average number of coronary risk factors for all patients (n = 21)p = 0.004, vs. at admission; **p = 0.001, vs. at admission; ***p = 0.011, vs. at admission; †p = 0.035, vs. at 6 months