Prognostic impact of initial serum albumin for newly developing heart failure after acute myocardial infarction

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Background/Introduction: Previous studies have shown that poor nutritional status relate to the clinical outcomes in patients with heart failure (HF). However, relationships between initial serum albumin and newly developing HF after acute myocardial infarction (AMI) remain unclear.

Methods: We evaluated 2289 consecutive patients with AMI in our hospital. Primary outcome was HF hospitalization after AMI. We analyzed the predictive impact of initial serum albumin using multivariate analysis, both in all AMI patients and subgroup of AMI patient without known risk factors of HF (LMT, peak CK >8000, eGFR <30, and LVEF <35%).

Result: In the remote-phase(median follow-up: 754 days), 5.4% of all AMI patients were hospitalized due to HF. Multivariate analysis showed that low albumin (<4.0g/dl) was an independent predictor of HF hospitalization after AMI in all patients, as well as other known risk factors. Interestingly, low albumin still showed the predictive value even in the no-HF risk subgroup. Kaplan-meier curve of no-HF risk group is shown in the Figure.

Conclusions: Low initial albumin level would be an useful predictor of newly developing HF in the remote-phase after AMI.

Multivariable analysis for HF hospitalization after AMI

HF risk defined as LMT, peak CK > 8000, eGFR < 30, and LVEF < 35%.

	All patients (N=2289)			No-HF risk group (N=1817)		
	HR	95 % CI	p	HR	95 % CI	p
Female	0.93	0.53-1.59	0.80	1.01	0.48-2.04	0.97
Age ≧ 80	1.78	0.98-4.08	0.05	1.67	0.72-3.67	0.22
Delayed arrival	0.50	0.03-2.28	0.44	1.57	0.99-1.74	0.99
LMT	2.30	0.64-6.46	0.18			
LAD	1.96	1.18-3.36	<0.01	2.41	1.24-4.89	<0.01
Peak CK >8000	3.19	1.55-6.14	<0.01			
Alb≦ 4 g/dl	2.46	1.43-4.35	<0.01	2.42	1.18-4.94	<0.01
eGFR < 30	2.11	0.99-4.08	0.05			
LVEF < 35%	7.66	4.22-13.3	<0.01			

Delayed arrival; over 48 hours, LMT: left main trunk, LAD: left anterior descending artery, CK: creatinine kinase (IU/L), eGFR: estimate glomerular filtration rate (ml/min/1.73m^2), LVEF: left ventricular ejection fraction

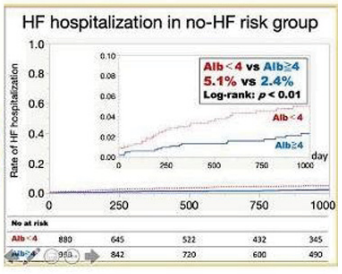

Figure 1