SUPPLEMENTARY MATERIAL:

Prognostic value of estimated plasma volume in patients with chronic systolic heart failure

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Table S1

Characteristics of the study population

35.6 months follow-up	All Patients N = 231	First 【ePVS ≤ 3.56 dl/g】 (n = 77)	Second 【**3.56** < e PVS ≤ **4.3**5 dl/g】 (n = 77)	Third 【ePVS > 4.35dl/g】 (n = 77)	P Value
Primary outcome	59.7%, n = 138	48.1%, n = 37	59.7%, n = 46	71.4%, n = 55	0.013
All cause death	26.0%, n = 60	14.3%, n = 11	28.6%, n = 22	35.1%, n = 27	0.011
Re-hospitalization	52.8%, n = 122	41.6%, n = 32	49.4%, n = 38	67.5%, n = 52	0.004

Abbreviations as in Table 1

Table S2

Correlation and collinearity between ePVS, logBNP and LVEF

	logBNP	ePVS	LVEF, %
logBNP	-	-	-
ePVS	Pearson Correlation: 0.298 P < 0.001	-	-
LVEF, %	Pearson Correlation: -0.229 P < 0.001	Pearson Correlation: -0.008 P = 0.903	-
LVEF ≤ 40%	Pearson Correlation: -0.149 P = 0.063	Pearson Correlation: -0.097 P = 0.230	-
40% < LVEF < 50%	Pearson Correlation: -0.034 P = 0.771	Pearson Correlation: 0.250 P = 0.031	-

Abbreviations as in Table 1

Table S3

Association between baseline variables and primary outcome in Univariable Cox regression analysis

Variables	Univariable HR (95% Cl)	P Value
Age, years	1.012 (0.993-1.031)	0.209
Male, n	0.711 (0.509-0.995)	0.047
BMI, kg/m^2	0.981 (0.940-1.023)	0.371
Hypertension, n	1.037 (0.720-1.495)	0.844
Diabetes, n	0.864 (0.477-1.564)	0.628
Coronary artery disease, n	1.301 (0.911-1.858)	0.148
NYHA I/II/III/IV, %		0.006
NYHA I	0.354 (0.192-0.651)	0.001
NYHA II	0.927 (0.634-1.353)	0.693
logBNP	2.427 (1.639-3.593)	< 0.001
MAGGIC score	1.056 (1.023-1.089)	0.001
LVEF, %	0.958 (0.938-0.979)	< 0.001
Systolic BP, mmHg	0.992 (0.984-1.001)	0.079
Albumin, g/dl	1.005 (0.958-1.055)	0.830
BUN, mg/dl	0.976 (0.890-1.070)	0.604
Sodium, mmol/l	0.993 (0.934-1.055)	0.993
Uric acid, mg/dl	1.001 (0.999-1.002)	0.591
Hemoglobin, g/dl	0.978 (0.969-0.988)	< 0.001
Hematocrit, %	0.936 (0.907-0.965)	< 0.001
ePVS	1.659 (1.358-2.027)	< 0.001
eGFR, ml/min per 1.73 m^2	0.993 (0.985-1.002)	0.111
ACEI/ARB, %	0.907 (0.592-1.391)	0.655
Beta blocker, %	1.200 (0.767-1.878)	0.425

Aldosterone antagonist, %	1.289 (0.858-1.938)	0.221
Diuretics, %	0.737 (0.523-1.038)	0.081
Digitalis, %	1.213 (0.817-1.802)	0.338

Abbreviations: HR = Hazard Ratio; CI = confidence interval; other abbreviations as in Table 1

Table S4

Subgroups analyses: univariable cox regression analysis for primary outcome.

Subgroups		univariable cox regression analysis for primary outcome	
		HR ratio (95%Cl) for ePVS	P Value
LVEF	LVEF ≤ 40% (n=156, 112 events)	1.547 (1.234 – 1.940)	< 0.001
	40% < LVEF < 50% (n=75, 26 events)	2.389 (1.510 – 3.779)	< 0.001

Abbreviations: HR = Hazard Ratio; CI = confidence interval; other abbreviations as in Table 1

Table S5

	Model	HR ratio (95%Cl) for ePVS	P Value
survival model	ePVS	1.646 (1.342-2.019)	< 0.001
	ePVS + age + gender	1.646 (1.342-2.019)	< 0.001
	ePVS + MAGGIC score + logBNP	1.635 (1.326-2.017)	< 0.001
competing risk model	ePVS	1.644 (1.297-2.084)	< 0.001
	ePVS + age + gender	1.742 (1.331-2.280)	< 0.001
	ePVS + MAGGIC score + logBNP	1.584 (1.241-2.022)	< 0.001

Competing risk regression analysis for HF re-hospitalization.

Abbreviations: HR = Hazard Ratio; CI = confidence interval; other abbreviations as in Table 1

Table S6

Term	P Value
ePVS	0.009
anemia	0.265
ePVS * anemia	0.275

Test for interaction between ePVS and anemia on primary outcome.

Abbreviations: abbreviations as in Table 1