

Supplementary Materials

Kim BG, et. al. Elevated C-reactive protein/albumin ratio is associated with lesion complexity, multilevel involvement, and adverse clinical outcomes in patients with peripheral artery disease who underwent endovascular therapy

Contents

- I. Supplementary Table 1. Comparison of baseline characteristics by TASC classification.
- II. Supplementary Table 2. Comparison of baseline characteristics by multilevel involvement.
- III. Supplementary Table 3. Predictive value of CRP, albumin and CAR for MACEs.
- IV. Supplementary Table 4. Independent predictors for MACE after endovascular treatment.
- V. Supplementary Figure 1. Hazard ratio of MACE according to albumin, CRP, CAR levels.

Supplementary Table 1. Comparison of baseline characteristics by TASC classification.

	With TASC C/D lesions (n=195)	With TASC A/B lesions (n=171)	p
Age, years	71.5 ± 11.3	67.3 ± 10.3	<0.001
Male, n (%)	138 (70.8)	141 (82.5)	0.013
Body mass index, kg/m ²	23.0 ± 4.0	23.3 ± 3.2	0.428
Comorbidities, n (%)			
Hypertension	150 (76.9)	127 (74.3)	0.639
Diabetes	101 (51.8)	85 (49.7)	0.769
Dyslipidemia	135 (69.2)	119 (69.6)	1.000
Current smoker	59 (30.3)	67 (39.2)	0.092
Chronic kidney disease	58 (29.7)	46 (26.9)	0.627
Previous MI	24 (12.3)	15 (8.8)	0.355
Previous EVT	20 (10.3)	6 (3.5)	0.021
Clinical manifestation, n (%)			0.001
Claudication	105 (53.8)	121 (71.2)	
Critical limb ischemia	90 (46.2)	49 (28.8)	
Laboratory data			
Hemoglobin, g/L	11.7 ± 2.1	12.6 ± 2.0	<0.001
White blood cell count, k/μm ³	9.3 ± 4.2	8.2 ± 2.7	0.001
LDL cholesterol, mg/dL	92 ± 31	93 ± 32	0.869
HDL cholesterol, mg/dL	37 ± 12	39 ± 10	0.158
Serum creatinine, mg/dL	1.6 ± 2.1	1.7 ± 2.2	0.586
Albumin, g/dL	3.6 ± 0.6	3.8 ± 0.5	0.003
Median C-reactive protein, mg/dL	0.95 [0.10-4.93]	0.30 [0.10-1.40]	0.001
Median CAR	0.32 [0.03-1.46]	0.06 [0.02-0.38]	0.001
Ejection fraction, %	56 ± 14	59 ± 13	0.107
Multivessel disease, n (%)	88 (45.1)	27 (15.8)	<0.001

CAR, C-reactive protein-to-albumin ratio; EVT, endovascular treatment; HDL, high-density lipoprotein; LDL, low-density lipoprotein; MI, myocardial infarction; TASC, TransAtlantic Inter-Society Consensus for the Management of Peripheral Arterial Disease

Supplementary Table 2. Comparison of baseline characteristics by multilevel involvement.

	With multilevel disease (n=121)	With single-level disease (n=260)	p
Age, years	70.6 ± 11.4	68.7 ± 11.5	0.132
Male, n (%)	89 (73.6)	200 (76.9)	0.557
Body mass index, kg/m ²	22.9 ± 3.9	23.2 ± 3.6	0.396
Comorbidities, n (%)			
Hypertension	85 (70.2)	200 (76.9)	0.204
Diabetes	61 (50.4)	128 (49.2)	0.916
Dyslipidemia	80 (66.1)	180 (69.2)	0.624
Current smoker	45 (37.2)	83 (31.9)	0.370
Chronic kidney disease	41 (33.9)	63 (24.2)	0.065
Previous MI	10 (8.3)	29 (11.2)	0.494
Previous EVT	7 (5.8)	20 (7.7)	0.645
Clinical manifestation, n (%)			0.003
Claudication	60 (49.6)	172 (66.4)	
Critical limb ischemia	61 (50.4)	87 (33.6)	
Laboratory data			
Hemoglobin, g/L	11.5 ± 2.1	12.4 ± 2.0	<0.001
White blood cell count, k/μm ³	10.0 ± 4.8	8.4 ± 2.8	<0.001
LDL cholesterol, mg/dL	95 ± 29	91 ± 35	0.360
HDL cholesterol, mg/dL	35 ± 9	39 ± 11	0.001
Serum creatinine, mg/dL	1.7 ± 2.0	1.6 ± 2.1	0.411
Albumin, g/dL	3.5 ± 0.6	3.8 ± 0.5	<0.001
Median C-reactive protein, mg/dL	2.2 [0.3-8.2]	0.3 [0.1-2.3]	<0.001
Median CAR	0.69 [0.11-2.58]	0.08 [0.03-0.63]	<0.001
Ejection fraction, %	58 ± 13	58 ± 13	0.648
TASC C/D lesion, n (%)	88 (76.5)	107 (42.6)	<0.001

CAR, C-reactive protein-to-albumin ratio; EVT, endovascular treatment; HDL, high-density lipoprotein; LDL, low-density lipoprotein; MI, myocardial infarction; TASC, TransAtlantic Inter-Society Consensus for the Management of Peripheral Arterial Disease

Supplementary Table 3. Predictive value of CRP, albumin and CAR for MACEs.

	Unadjusted HR (95% CI)	p	Adjusted HR* (95% CI)	p
Albumin	0.68 (0.41-1.13)	0.136	0.88 (0.40-1.94)	0.756
CRP	1.15 (1.08-1.15)	<0.001	1.05 (0.99-1.12)	0.091
CAR	1.37 (1.27-1.47)	<0.001	1.19 (1.03-1.37)	0.021

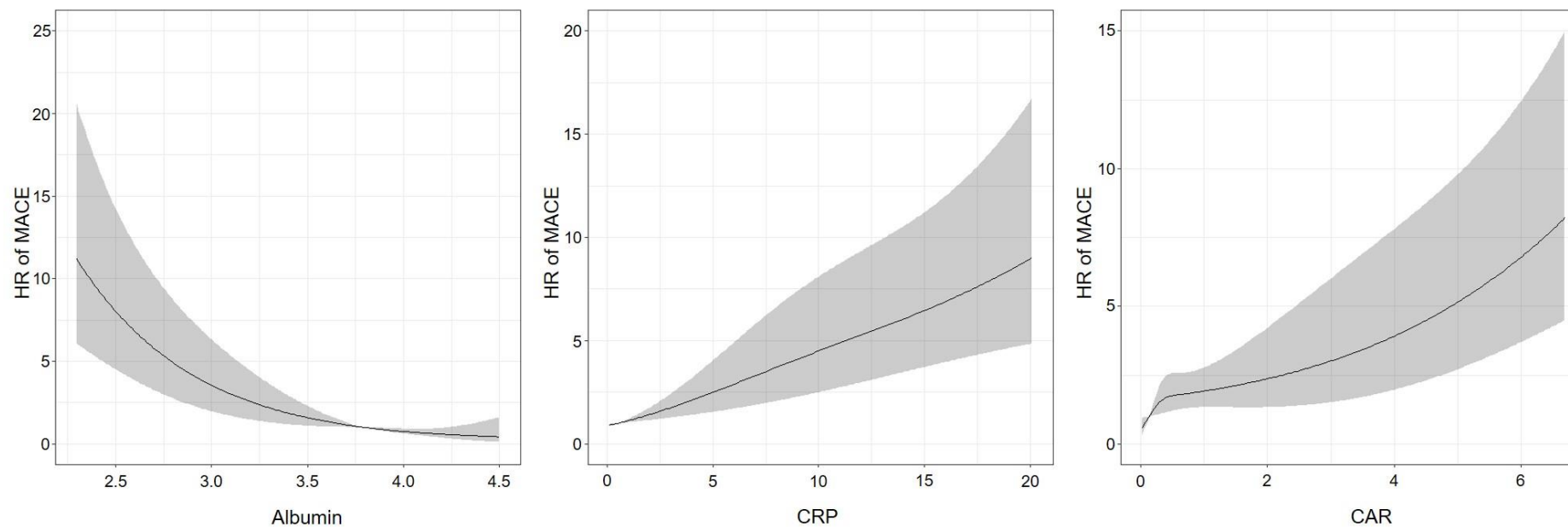
* Adjusted for age, body mass index, hypertension, chronic kidney disease, critical limb ischemia, ejection fraction, hemoglobin, white blood cell count, high-density lipoprotein cholesterol, and statin use at discharge

CAR, C-reactive protein-to-albumin ratio; CI, confidence interval; CRP, C-reactive protein; HR, hazard ratio; MACEs, major adverse cardiovascular events; MALEs, major adverse limb events

Supplementary Table 4. Independent predictors for MACEs after endovascular treatment.

	Non-adjusted		Adjusted	
	HR (95% CI)	p	HR (95% CI)	p
Age	1.07 (1.05–1.10)	<0.001	1.08 (1.04–1.12)	<0.001
Body mass index	0.91 (0.85–0.98)	0.009	0.90 (0.83–0.98)	0.021
Hypertension	1.80 (0.99–3.26)	0.053	1.70 (0.62–4.67)	0.306
Chronic kidney disease	3.56 (2.28–5.57)	<0.001	3.37 (1.73–6.54)	<0.001
Critical limb ischemia	2.78 (1.77–4.39)	<0.001	1.62 (0.84–3.11)	0.149
Ejection fraction	0.97 (0.96–0.99)	<0.001	0.97 (0.96–0.99)	0.009
Hemoglobin	0.68 (0.60–0.76)	<0.001	0.89 (0.74–1.07)	0.221
White blood cell count	1.10 (1.05–1.14)	<0.001	1.03 (0.95–1.12)	0.487
HDL cholesterol	0.97 (0.94–0.99)	0.011	0.99 (0.96–1.02)	0.511
Statin use at discharge	0.41 (0.26–0.64)	<0.001	0.78 (0.38–1.59)	0.493
CAR	1.37 (1.27–1.47)	<0.001	1.19 (1.03–1.37)	0.021

CAR, C-reactive protein-to-albumin ratio; CI, confidence interval; HDL, high-density lipoprotein; HR, hazard ratio; MACEs, major adverse cardiovascular events



Supplementary Figure 1. Hazard ratio of MACE according to albumin, CRP, CAR levels.

CAR, C-reactive protein-to-albumin ratio; CRP, C-reactive protein; HR, hazard ratio; MACE, major adverse cardiovascular event