

P1245 **AORTIC ARCH CALCIFICATION AND PROGNOSIS IN HEMODIALYSIS PATIENTS**

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Background and Aims: Aortic arch calcification (AAC) is associated with poor survival in dialysis patients, but long-term prognosis has not been examined well.

Method: In the present study, we investigated the prognostic impact of AAC among 321 chronic hemodialysis patients (211 males, 64±11 ages, dialysis history 10±8 years). ACC in chest X-ray was evaluated in 2012 and the patients were followed up for 7 years. The degree of AAC was classified into 4 categories as follows: Grade 0, no visible calcification; Grade 1, small spots of calcification or single thin calcification of the aortic knob; Grade 2, one or more areas of thick calcification; and Grade 3, circular calcification of the aortic knob.

Results: Calcification gravity was Grade 0 in 88 patients (27%), Grade 1 in 145 (45%), Grade 2 in 54 (17%) and Grade 3 in 34 (11%). All-cause mortality was significantly worse in patients with higher AAC grade (Grade 0: 19% (n=17), Grade 1: 35% (n=51), Grade 2: 46% (n=25), Grade 3: 71% (n=24); p < 0.0001). Univariate analysis showed AAC grade, age, cardiothoracic ratio, ischemic heart disease, cerebral vascular disease, albumin, hemoglobin, C-reactive protein and use of non-Ca phosphorus binders were significantly associated with all-cause mortality. In multivariate analysis, Grade 3 AAC, age and ischemic heart disease were independent risk factors for all-cause mortality. (Figure)

Conclusion: In our dialysis patients, higher gravity of AAC was independently associated with all-cause mortality. Gravity of AAC in chest X-ray is useful to predict prognosis of dialysis patients.

Risk Factors for all cause mortality	Univariate			Multivariate		
	HR	95% CI	P value	HR	95% CI	P value
AAC Grade 1 vs. Grade 0	1.98	1.17–3.52	0.01*	1.28	0.75–2.31	0.38
Grade 2 vs. Grade 0	2.78	1.51–5.24	0.001*	1.74	0.94–3.30	0.08
Grade 3 vs. Grade 0	5.72	3.08–10.9	< 0.0001*	2.83	1.43–5.73	0.003*
Dialysis vintage (year)	1.00	0.99–1.00	0.15			
Age (year)	1.06	1.04–1.08	< 0.0001*	1.05	1.02–1.07	< 0.001*
Male	0.73	0.51–1.07	0.10			
Diabetes	1.28	0.88–1.83	0.19			
Hypertension	1.14	0.79–1.65	0.50			
Cardiothoracic ratio (%)	1.06	1.03–1.10	< 0.001*	1.02	0.98–1.06	0.28
Hyperlipidemia	0.91	0.61–1.33	0.62			
Ischemic Heart Disease	1.79	1.18–2.66	0.007*	1.66	1.07–2.51	0.02*
Cerebral Vascular Disease	1.81	1.23–2.64	0.002*	1.41	0.94–2.09	0.09
Albumin (g/dL)	0.18	0.10–0.34	< 0.01*	0.65	0.31–1.36	0.25
Hemoglobin (g/dL)	0.77	0.62–0.94	0.01*	0.88	0.70–1.11	0.29
C-reactive protein (mg/dL)	1.44	1.22–1.66	< 0.01*	1.14	0.93–1.39	0.20
Corrected Calcium (mg/dL)	0.99	0.70–1.41	0.97			
Use of CaCO ₃	0.88	0.76–1.01	0.08			
Use of Non-Ca Phosphorus binders	0.63	0.44–0.91	0.01*	1.06	0.70–1.61	0.78
Use of Vit D	0.99	0.68–1.44	0.97			

Figure: