Clot structure is a predictor of mortality in hemodialysis patients

Supplemental Data

Supplementary table 1. Mortality (all-cause and cardiovascular) according to clot density (higher vs. lower clot density) with adjustment for parameters from table 1.

VARIABLE	All-cause mortality			Cardiovascular mortality		
FT≥0.32	Hazard ratio	95% CI	P value	Hazard ratio	95% CI	P value
Crude (FT≥0.32)	2.54	1.31-4.91	0.006	3.02	1.39-6.53	0.005
FT≥0.32 plus covariates						
Gender (m/f)	2.53	1.31-4.89	0.006	3.01	1.39-6.52	0.005
Age (years)	2.33	1.20-4.52	0.012	2.74	1.26-5.95	0.011
Dialysis vintage (years)	2.47	1.27-4.81	0.008	2.93	1.34-6.40	0.007
Diabetes	2.55	1.32-4.94	0.005	3.01	1.39-6.53	0.005
Smoking	2.51	1.30-4.85	0.006	3.00	1.38-6.48	0.005
Ischemic heart disease	2.59	1.34-5.02	0.005	3.06	1.41-6.63	0.005
Peripheral artery disease	2.46	1.26-4.78	0.008	2.85	1.30-6.21	0.009
Congestive heart failure	2.55	1.32-4.93	0.005	3.01	1.39-6.52	0.005
Access thrombosis	2.73	1.39-5.38	0.004	3.39	1.51-7.58	0.003
Access (fistula vs. graft)	2.53	1.30-4.90	0.006	3.03	1.40-6.57	0.005
Blood pressure						
Systolic BP (mmHg)	2.51	1.29-4.84	0.006	2.98	1.38-6.45	0.006
Diastolic BP(mmHg)	2.48	1.28-4.79	0.007	2.96	1.37-6.42	0.006
Anthropometrics						
BMI (kg/m^2)	2.50	1.29-4.82	0.006	2.99	1.38-6.48	0.005
Dialysis parameters						
Kt/V	2.48	1.28-4.79	0.007	2.93	1.35-6.35	0.006
Laboratory variables						
Protein (g/l)	2.54	1.31-4.92	0.006	3.02	1.40-6.54	0.005
Hemoglobin (g/dl)	2.68	1.38-5.19	0.003	3.18	1.47-6.91	0.003
CRP (nmol/l)	2.25	1.16-4.35	0.016	2.65	1.22-5.75	0.014
C3 (g/l)	2.48	1.26-4.88	0.008	3.06	1.39-6.73	0.006
Fibrinogen (µmol/l)	2.68	1.29-5.57	0.008	3.31	1.41-7.79	0.006
Medication						
Platelet inhibition	2.55	1.32-4.92	0.005	3.03	1.40-6.56	0.005
Erythropoietin stimulating agent (ESA)	2.56	1.32-4.95	0.005	3.03	1.40-6.57	0.005

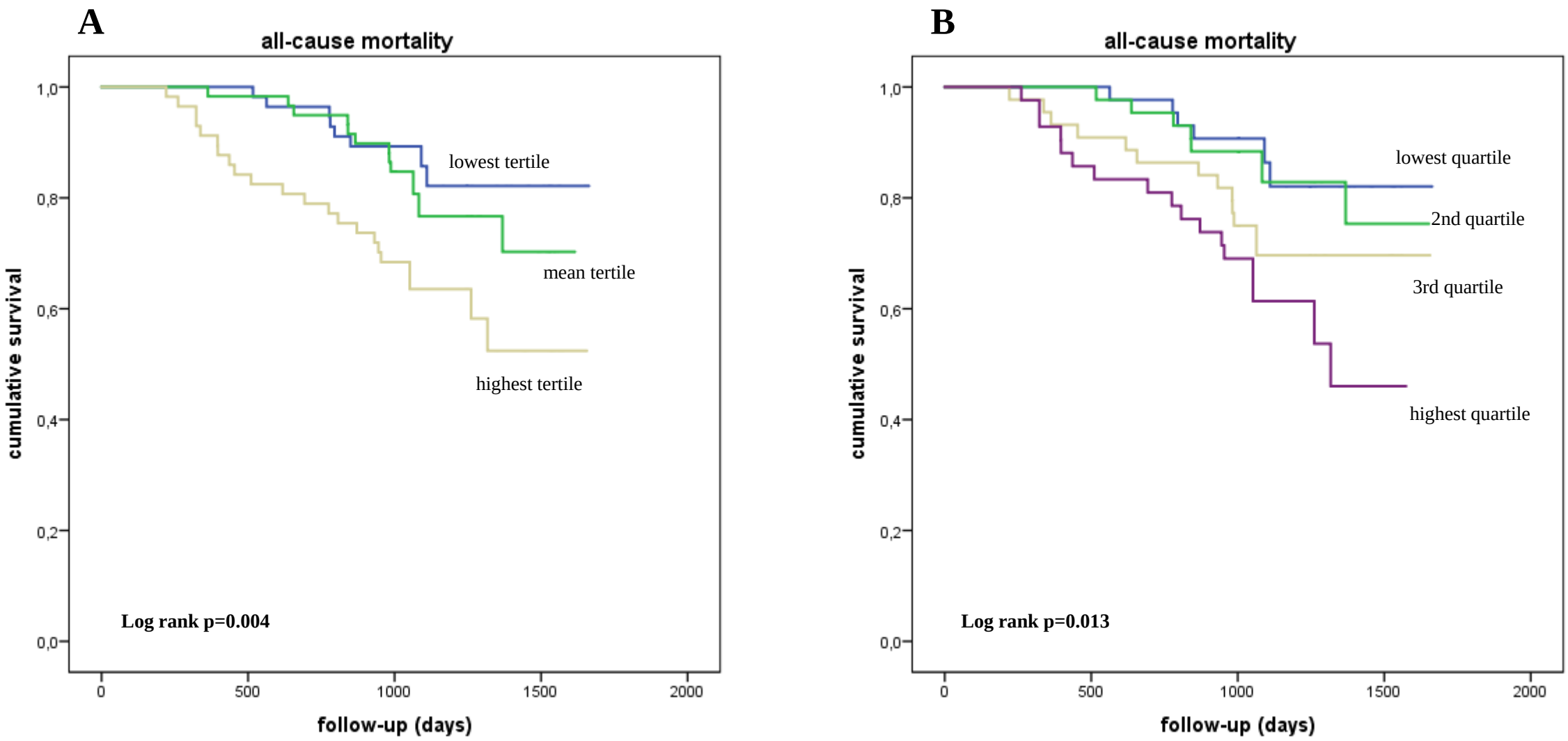
ESA dose per week	2.45	1.11-5.42	0.027	2.84	1.10-7.32	0.031
Vitamin D	2.60	1.35-5.03	0.005	3.13	1.44-6.78	0.004
ACE inhibitor	2.62	1.35-5.08	0.004	3.17	1.46-6.88	0.004

FT: final turbidity, AU: Arbitrary units, CRP: C-reactive protein, C3: complement C3, BMI: body mass index, BP: blood pressure, Data are presented as mean±SD or as a percentage for categorical data.

Supplementary table 2. Clinical characteristics of matched patients with low and high levels of final turbidity (FT).

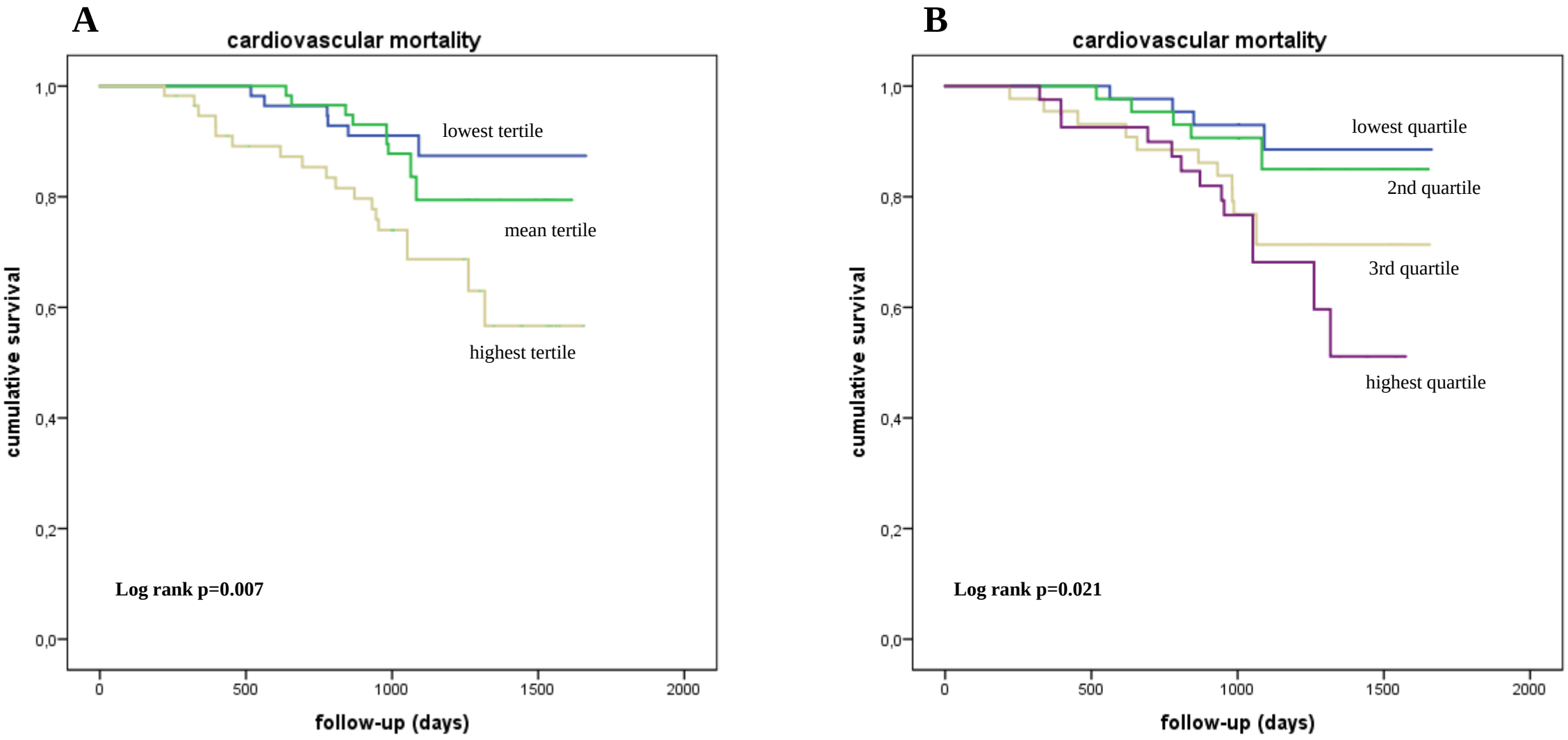
VARIABLE	Patients (n = 40)	FT<0.32 (AU) (n = 20)	FT≥0.32 (AU) (n = 20)	P
Gender, n (m/f)	21/19	11/9	10/10	0.752
Age (years)	57±11	56±12	59±10	0.424
Dialysis vintage (years)	6.9±4.3	6.9±3.9	6.9±4.7	0.956
Diabetes, n (%)	1 (2.5)	1 (0.5)	0 (0)	0.311
Smokers, n (%)	12 (30)	5 (25)	7 (35)	0.490
CRP (nmol/l)	7.50±8.75	7.54±10.04	7.46±7.51	0.976
Clot final turbidity (AU)	0.333±0.143	0.199±0.036	0.467±0.051	<0.001

Supplementary figure 1



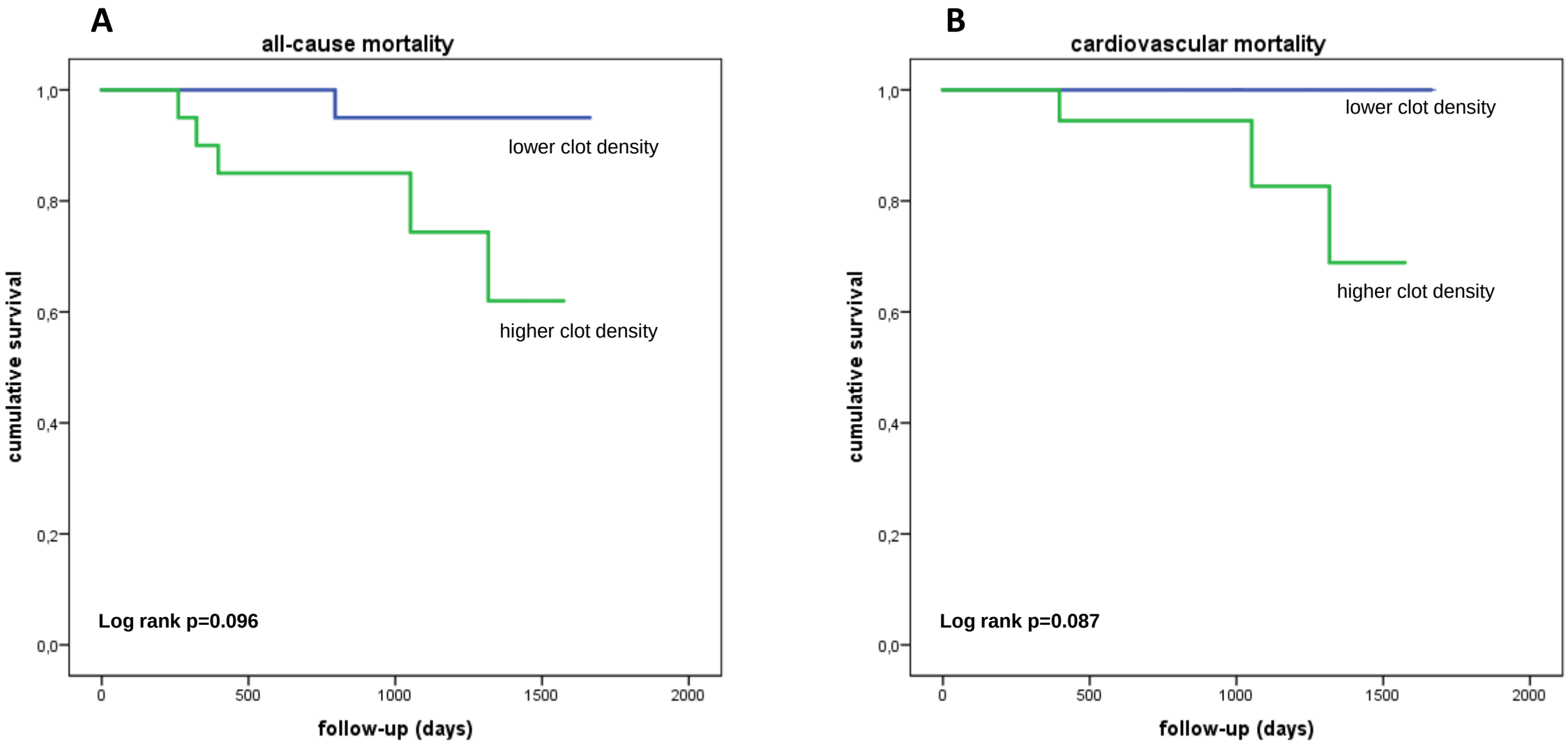
Supplementary figure 1. Higher clot density is associated with increased all-cause mortality in dialysis patients grouped according to tertiles and quartiles of clot density. Kaplan-Meier analysis of tertiles (A) and quartiles (B) of patients with different dense clot structure, log-rank test: P=0.004 and p=0.013, respectively.

Supplementary figure 2



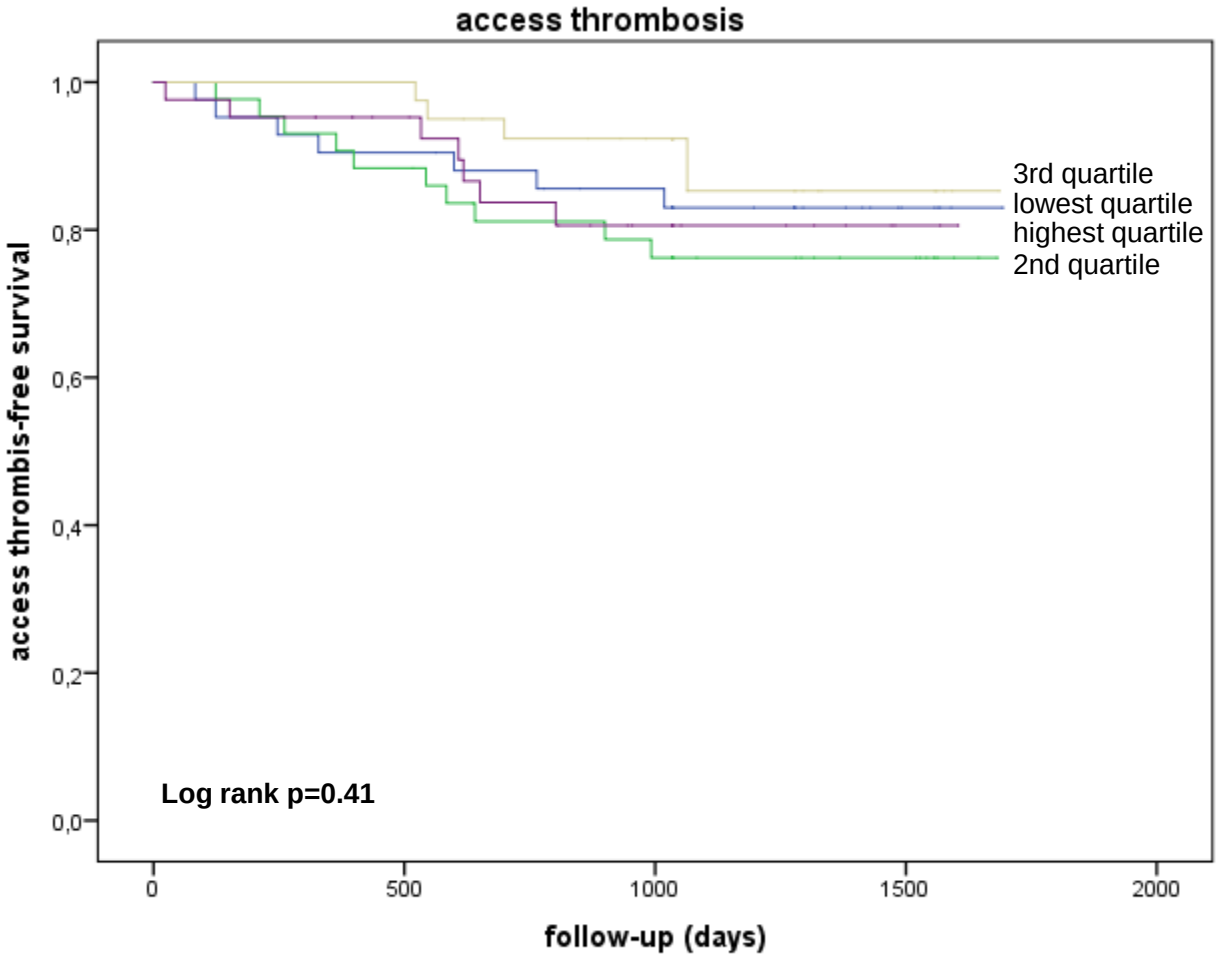
Supplementary figure 2. Higher clot density is associated with increased cardiovascular mortality in dialysis patients grouped according to tertiles and quartiles of clot density. Kaplan-Meier analysis of tertiles (A) and quartiles (B) of patients with different dense clot structure, log-rank test: P=0.007 and p=0.021, respectively.

Supplementary figure 3



Supplementary figure 3. Higher clot density is associated with a tendency for increased all-cause and cardiovascular mortality in 40 matched patients. (A) All-cause and (B)cardiovascular mortality risk (log rank p=0.096 and p=0.087, respectively). Kaplan-Meier analysis of 40 patients with denser or less dense clot structure (20 patients each group matched for CRP, gender, age, dialysis vintage, diabetes and smoking).

Supplementary figure 4



Supplementary figure 4. Clot density is not associated with vascular access thormbosis. Kaplan-Meier analysis of quartiles of patients with different dense clot structure, log rank test: p=0.41.