SUPPLEMENTAL DATA

Kopecky C et al.: HDL Cholesterol Efflux Does Not Predict Cardiovascular Risk in Hemodialysis Patients

Supplemental Table I. Variables which are associated with cholesterol efflux capacity

	r	*p* value
Apolipoprotein A-I	0.264	**<0.001**
HDL-C	0.246	**<0.001**
Albumin	0.161	**<0.001**
LDL-C	0.101	**0.001**
Duration of dialysis	0.098	**0.001**
Total cholesterol	0.096	**0.001**
Serum creatinine	0.056	0.046
Diastolic blood pressure	0.055	0.063
Systolic blood pressure	0.052	0.079
Phosphate	0.046	0.123
Ultrafiltration volume	0.044	0.140
HbA1c	0.034	0.258
Age	-0.044	0.138
C-reactive protein	-0.044	0.140
SAA(HDL)	-0.030	0.316
Duration of diabetes	-0.023	0.445
BMI	-0.022	0.466
Hemoglobin	-0.008	0.785
SP-B(HDL)	0.005	0.857

Variables are listed in decreasing order of strength of association. r, Pearson correlation coefficient; BMI, body mass index; SAA(HDL), HDL-bound serum amyloid A; SP-B(HDL), HDL-bound surfactant protein B.

Supplemental Table II. Prognostic effect of cholesterol efflux capacity according to tertiles on selected endpoints.

Model 1	Tertile 1 (n=383)		Tertile 2 (n=382)			Tertile 3 (n=382)		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	0.96 (0.77 - 1.19)	0.718	187	1.01 (0.80 - 1.27)	0.934
all cardiac events combined	156	1.00 (reference)	196	1.12 (0.88 - 1.43)	0.353	182	0.95 (0.74 - 1.21)	0.665
all-cause mortality	185	1.00 (reference)	177	0.85 (0.68 - 1.06)	0.150	199	0.85 (0.69 - 1.05)	0.133

Model 2	Tertile 1 (n=383)		Tertile 2 (n=382)			Tertile 3 (n=382)		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	0.96 (0.77 - 1.20)	0.739	187	1.00 (0.79 - 1.27)	0.981
all cardiac events combined	156	1.00 (reference)	196	1.31 (0.88 - 1.45)	0.332	182	0.96 (0.75 - 1.24)	0.755
all-cause mortality	185	1.00 (reference)	177	0.87 (0.69 - 1.09)	0.225	199	0.88 (0.72 - 1.08)	0.236

Model 3	Tertile 1 (n=383)		Tertile 2 (n=382)			Tertile 3 (n=382		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	0.99 (0.79 – 1.23)	0.896	187	1.03 (0.82 – 1.30)	0.827
all cardiac events combined	156	1.00 (reference)	196	1.16 (0.90 – 1.49)	0.251	182	0.98 (0.76 – 1.27)	0.900
all-cause mortality	185	1.00 (reference)	177	0.91 (0.72 – 1.14)	0.421	199	0.93 (0.76 – 1.14)	0.471

Model 4	Tertile 1 (n=383)			Tertile 2 (n=382)			Tertile 3 (n=382		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	1.04 (0.83 - 1.31)	0.721	187	1.09 (0.84 - 1.40)	0.528
all cardiac events combined	156	1.00 (reference)	196	1.20 (0.92 - 1.57)	0.176	182	1.00 (0.76 - 1.32)	0.997
all-cause mortality	185	1.00 (reference)	177	0.96 (0.78 - 1.20)	0.746	199	0.98 (0.78 - 1.23)	0.886

Model 5	Tertile 1 (n=383)			Tertile 2 (n=382)			Tertile 3 (n=382)		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	1.02 (0.81 - 1.30)	0.845	187	1.08 (0.83 - 1.40)	0.580
all cardiac events combined	156	1.00 (reference)	196	1.20 (0.92 - 1.56)	0.186	182	1.01 (0.77 - 1.33)	0.952
all-cause mortality	185	1.00 (reference)	177	0.94 (0.75 - 1.19)	0.608	199	0.95 (0.75 - 1.21)	0.679

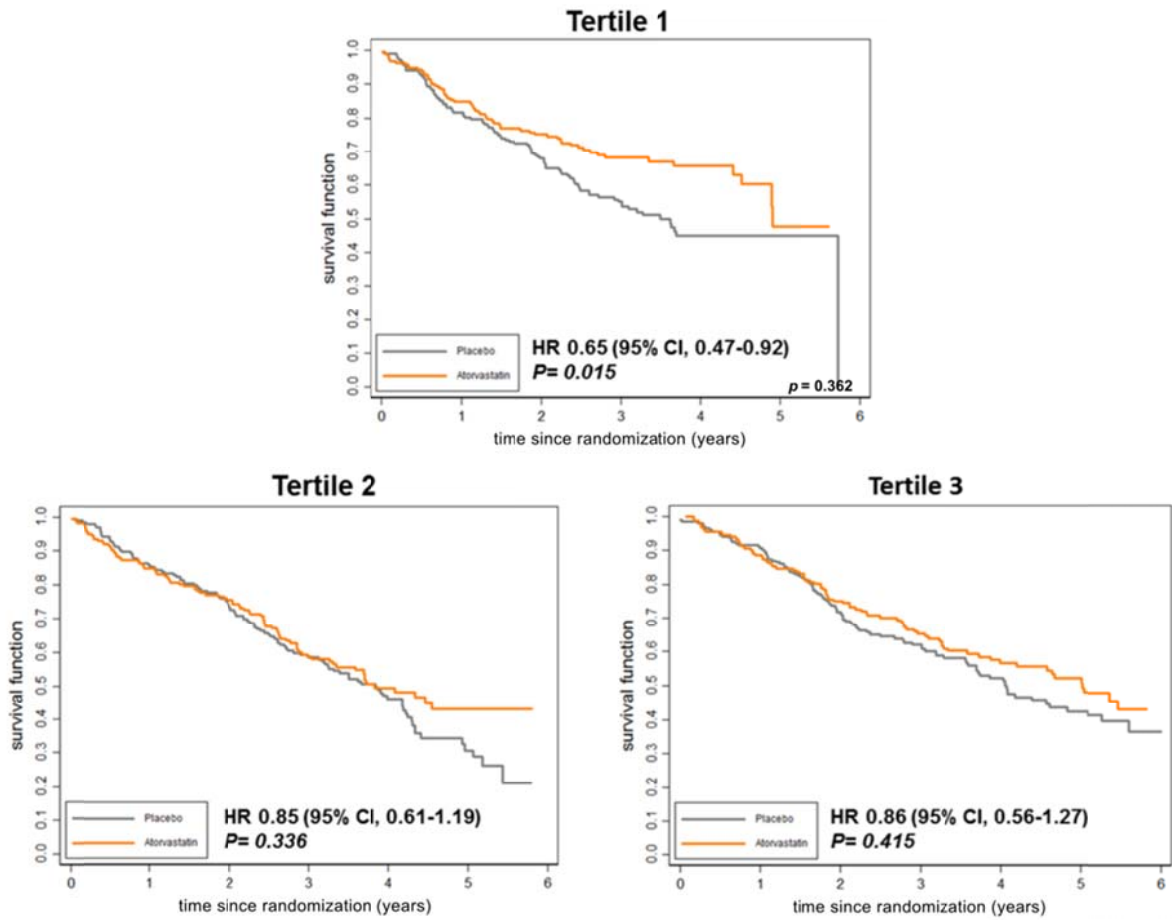| Model 6	Tertile 1 (n=383)			Tertile 2 (n=382)			Tertile 3 (n=382)		
endpoint	No of events	HR (95% CI)	No of events	HR (95% CI)	p value	No of events	HR (95% CI)	p value
combined primary endpoint	150	1.00 (reference)	161	1.02 (0.80 - 1.30)	0.869	187	1.07 (0.83 - 1.39)	0.586
all cardiac events combined	156	1.00 (reference)	196	1.20 (0.92 - 1.56)	0.185	182	1.01 (0.77 - 1.33)	0.952
all-cause mortality	185	1.00 (reference)	177	0.95 (0.75 - 1.20)	0.664	199	0.96 (0.75 - 1.21)	0.704

Cox regression models to assess the prognostic value of cholesterol efflux capacity according to tertiles on selected endpoints. Combined primary endpoint (composite of cardiac death, nonfatal myocardial infarction, or stroke). Model 1: univariate; Model 2: adjusted for age and sex; Model 3: adjusted for age, sex and CRP; Model 4: adjusted for traditional risk factors (age, sex, coronary artery disease, arrhythmia, transient ischemic attack, congestive heart failure, peripheral vascular disease, smoking, systolic/diastolic blood pressure, BMI, albumin, phosphate, hemoglobin, HbA1c, duration of dialysis; Model 5: adjusted for traditional risk factors, LDL-C, HDL-C, apoA-I; Model 6: adjusted for traditional risk factors, LDL-C, HDL-C, apoA1, CRP.

Supplemental Table III. Baseline characteristics of study participants according to event occurrence.

Parameter	combined primary endpoint			all cardiac events combined			all-cause mortality		
	patients without event (n=724)	patients with event (n=423)	p value	patients without event (n=737)	patients with event (n=410)	p value	patients without event (n=586)	patients with event (n=561)	p value
Cholesterol efflux capacity	0.9 (0.4)	0.9 (0.2)	0.912	0.9 (0.4)	0.9 (0.2)	0.521	0.9 (0.3)	0.9 (0.3)	0.172
Age, years	66.0 (8.5)	66.9 (7.8)	0.057	66.4 (8.3)	66.2 (8.2)	0.705	64.8 (8.5)	67.9 (7.8)	<0.001
Body mass index, kg/m2	27.7 (4.7)	27.2 (5.0)	0.046	27.7 (4.8)	27.3 (4.9)	0.149	28.3 (4.8)	26.7 (4.7)	<0.001
Duration of diabetes, years	17.7 (8.4)	18.8 (8.8)	0.028	17.7 (8.4)	18.8 (8.8)	0.035	17.5 (8.3)	18.8 (8.7)	0.009
Duration of dialysis, months	8.1 (6.7)	8.3 (7.0)	0.701	8.0 (6.7)	8.5 (7.0)	0.272	7.8 (6.6)	8.6 (7.0)	0.040
Male, n %	414 (57.2)	214 (50.6)	0.030	400 (54.3)	228 (55.6)	0.663	329 (56.1)	299 (53.3)	0.333
Nonsmoker, n (%)	428 (59.1)	254 (60.0)	0.283	445 (60.4)	237 (57.8)	0.651	361 (61.6)	321 (57.2)	0.316
History, n (%)									
Arrhythmia	119 (16.4)	93 (22.0)	0.019	130 (17.6)	82 (20.0)	0.324	86 (14.7)	126 (22.5)	0.001
Congestive heart failure	240 (33.2)	171 (40.4)	0.013	242 (32.8)	169 (41.2)	0.005	164 (28.0)	247 (44.0)	<0.001
Stroke/TIA	116 (16.0)	86 (20.3)	0.065	126 (17.1)	76 (18.5)	0.539	103 (17.6)	99 (17.7)	0.975
Peripheral vascular disease	293 (40.5)	221 (52.3)	<0.001	298 (40.4)	216 (52.7)	<0.001	196 (33.5)	318 (56.7)	<0.001
MI/CABD/PTCA/CAD	180 (24.9)	163 (38.5)	<0.001	177 (24.0)	166 (40.5)	<0.001	133 (22.7)	210 (37.4)	<0.001
Hypertension	637 (88.0)	381 (90.1)	0.280	648 (87.9)	370 (90.2)	0.233	522 (89.1)	496 (88.4)	0.722
Systolic blood pressure, mm Hg	145.9 (22.0)	145.5 (22.0)	0.736	145.9 (22.2)	145.4 (21.6)	0.694	145.3 (22.1)	146.2 (21.9)	0.454
Diastolic blood pressure, mm Hg	75.6 (11.0)	76.3 (10.8)	0.317	75.7 (10.9)	76.1 (10.9)	0.500	76.0 (11.0)	75.7 (10.8)	0.679
Total cholesterol, mg/dl	218.3 (41.5)	221.2 (43.1)	0.261	217.6 (41.5)	222.6 (43.0)	0.053	218.8 (41.2)	220.0 (43.1)	0.612
Triglycerides, mg/dl	263.8 (164.9)	257.5 (164.3)	0.533	256.33 (159.1)	270.6 (174.0)	0.159	271.4 (177.2)	251.0 (149.8)	0.035
LDL cholesterol, mg/dl	125.0 (30.0)	127.6 (28.5)	0.154	125.2 (29.8)	127.3 (28.8)	0.257	124.2 (29.7)	127.8 (29.2)	0.034
HDL cholesterol, mg /dl	36.3 (13.0)	36.5 (13.9)	0.746	36.5 (13.3)	36.1 (13.4)	0.581	36.2 (12.6)	36.5 (14.1)	0.653
C-reactive protein, mg/L	10.6 (18.2)	11.0 (13.3)	0.642	10.5 (18.0)	11.1 (13.7)	0.586	8.6 (14.7)	13.0 (18.1)	<0.001
Albumin, g/dl	3.8 (0.3)	3.8 (0.3)	0.965	3.8 (0.3)	3.8 (0.3)	0.013	3.8 (0.3)	3.8 (0.3)	0.220
Hemoglobin, g/dl	11.0 (1.4)	10.8 (1.3)	0.012	10.9 (1.4)	10.8 (1.4)	0.334	11.0 (1.4)	10.8 (1.3)	0.002
HbA1c, %	6.7 (1.2)	6.8 (1.3)	0.014	6.7 (1.2)	6.8 (1.3)	0.181	6.6 (1.22)	6.8 (1.3)	0.002
Phosphate, mg/dL	5.9 (1.6)	6.3 (1.7)	<0.001	5.9 (1.6)	6.3 (1.7)	<0.001	5.9 (1.6)	6.2 (1.7)	0.010
Apolipoprotein A-I, mg/dl	127.2 (0.9)	124.7 (1.1)	0.088	127.2 (23.8)	124.7 (23.4)	0.086	127.2 (23.3)	125.4 (24.1)	0.210
SAA(HDL)	8.5 (7.9)	8.9 (7.9)	0.388	8.6 (7.9)	8.8 (7.8)	0.672	7.7 (7.3)	9.6 (8.2)	<0.001
SP-B(HDL)	9.1 (9.0)	10.6 (10.5)	0.012	9.4 (9.4)	10.0 (10.0)	0.323	8.4 (8.9)	11.0 (10.1)	<0.001
Apolipoprotein C-III, mg/dl	20.5 (9.5)	20.11(9.6)	0.508	20.1 (9.4)	20.8 (9.7)	0.287	21.0 (9.8)	19.6 (9.1)	0.012
Apolipoprotein C-II, mg/dl	6.3 (3.0)	6.3 (3.1)	0.944	6.2 (3.0)	6.5 (3.2)	0.123	6.4 (3.1)	6.2 (3.0)	0.328
ADMA	0.9 (0.2)	0.9 (0.2)	0.269	0.9 (0.2)	0.9 (0.2)	0.465	0.9 (0.2)	0.9 (0.2)	0.023
SDMA	2.5 (0.0)	2.6 (0.8)	0.281	2.6 (0.8)	2.6 (0.8)	0.607	2.6 (0.8)	2.6 (0.8)	0.842

carbamylated albumin	0.6 (0.3)	0.7 (0.3)	*<0.001*	0.6 (0.3)	0.7 (0.3)	*<0.001*	0.5 (0.2)	0.7 (0.3)	*<0.001*

Data are shown in means (SDs). *P* value for difference between patients with and without event was calculated with chi-square test for categorical data and Student's t-test for continuous data. ADMA, asymmetric dimethylarginine; CABG, coronary artery bypass grafting surgery; CAD, coronary artery disease; MI, myocardial infarction; PTCA, percutaneous transluminal coronary angioplasty; SAA(HDL), HDL-bound serum amyloid A; SDMA, symmetric dimethylarginine; SP-B(HDL), HDL-bound surfactant protein B, TIA, transitory ischemic attack.

Supplemental Figure I. Treatment efficacy of Atorvastatin on all cardiac events combined according to tertiles of HDL cholesterol efflux.