

**High Cholesterol Absorption Is Associated with Increased
Cardiovascular Risk in Hemodialysis Patients:
Insights from the AURORA Study**

Silbernagel et al.: Cholesterol Absorption and Statins in Hemodialysis

Supplementary Materials

Supplementary table 1

Title: Association of the cholestanol and lathosterol to cholesterol ratios with major adverse cardiovascular events and interactions with treatment

	N _{MACE} /N (%)	Model 1 ^a		Model 2 ^b		Model 3 ^c		p-value for interaction ^a
		HR (CI 95 %)	p-value	HR (CI 95 %)	p-value	HR (CI 95 %)	p-value	
Lathosterol/Cholesterol			0.46		0.32		0.22	0.077
First tertile (ref.)	251/778 (32.3%)	1.00	-	1.00	-	1.00	-	
Second tertile	244/777 (31.4%)	0.97 (0.81 - 1.15)	0.71	0.94 (0.78 - 1.12)	0.47	0.91 (0.76 - 1.09)	0.32	
Third tertile	233/777 (30.0%)	0.90 (0.75 - 1.07)	0.22	0.87 (0.73 - 1.04)	0.13	0.85 (0.71 - 1.02)	0.085	
Cholestanol/Cholesterol			0.001		0.002		0.030	0.35
First tertile (ref.)	234/778 (30.1%)	1.00	-	1.00	-	1.00	-	
Second tertile	221/777 (28.4%)	0.96 (0.80 - 1.16)	0.68	0.95 (0.79 - 1.14)	0.57	0.94 (0.78 - 1.13)	0.52	
Third tertile	273/777 (35.1%)	1.30 (1.09 - 1.55)	0.003	1.28 (1.07 - 1.52)	0.006	1.19 (0.99 - 1.42)	0.059	

^a unadjusted.

^b adjusted for age and sex.

^c adjusted for age, sex, body mass index, systemic hypertension, diabetes, smoking, log high sensitivity C-reactive protein, treatment group (rosuvastatin vs placebo).

N_{MACE} number of major adverse cardiovascular events; N total number; HR hazard ratio; CI confidence interval; ref. reference

Supplementary Table 2

Title: Association of the cholestanol and lathosterol to cholesterol ratios with cardiovascular mortality according to sex

	N _{CV death} /N (%)	Model 1 ^a		Model 2 ^b		Model 3 ^c	
		HR (CI 95 %)	p-value	HR (CI 95 %)	p-value	HR (CI 95 %)	p-value
Lathosterol/Cholesterol							
In females			0.13		0.13		0.070
First tertile (ref.)	99/351 (28.2%)	1.00	-	1.00	-	1.00	-
Second tertile	62/271 (22.9%)	0.77 (0.56 - 1.06)	0.11	0.78 (0.57 - 1.08)	0.13	0.77 (0.56 - 1.07)	0.12
Third tertile	59/261 (22.6%)	0.75 (0.55 - 1.04)	0.085	0.74 (0.54 - 1.02)	0.066	0.69 (0.49 - 0.96)	0.030
In males			0.33		0.39		0.44
First tertile (ref.)	114/427 (26.7%)	1.00	-	1.00	-	1.00	-
Second tertile	138/506 (27.3%)	1.01 (0.79 - 1.30)	0.93	0.97 (0.75 - 1.24)	0.78	0.95 (0.74 - 1.22)	0.71
Third tertile	123/516 (23.8%)	0.85 (0.66 - 1.10)	0.23	0.85 (0.66 - 1.09)	0.20	0.85 (0.65 - 1.10)	0.22
Cholestanol/Cholesterol							
In females			0.022		0.017		0.12
First tertile (ref.)	71/319 (22.3%)	1.00	-	1.00	-	1.00	-
Second tertile	62/277 (22.4%)	1.00 (0.71 - 1.40)	0.99	0.96 (0.68 - 1.35)	0.82	0.93 (0.66 - 1.31)	0.68
Third tertile	87/287 (30.3%)	1.46 (1.07 - 2.00)	0.017	1.45 (1.06 - 1.99)	0.019	1.28 (0.93 - 1.77)	0.13
In males			0.12		0.19		0.32
First tertile (ref.)	112/459 (24.4%)	1.00	-	1.00	-	1.00	-
Second tertile	127/500 (25.4%)	1.10 (0.85 - 1.41)	0.48	1.10 (0.85 - 1.42)	0.47	1.13 (0.88 - 1.46)	0.34
Third tertile	136/490 (27.8%)	1.29 (1.01 - 1.66)	0.045	1.26 (0.98 - 1.62)	0.071	1.22 (0.94 - 1.57)	0.13

^a unadjusted.

^b adjusted for age.

^c adjusted for age, body mass index, systemic hypertension, diabetes, smoking, log high sensitivity C-reactive protein, treatment group (rosuvastatin vs placebo).

N_{CV death} number of cardiovascular deaths; N total number; HR hazard ratio; CI confidence interval; ref. reference

Supplementary table 3

Title: Association of the cholestanol and lathosterol to cholesterol ratios with major adverse cardiovascular events according to sex

	N _{MACE} /N (%)	Model 1 ^a		Model 2 ^b		Model 3 ^c	
		HR (CI 95 %)	p-value	HR (CI 95 %)	p-value	HR (CI 95 %)	p-value
Lathosterol/Cholesterol							
In females			0.37		0.37		0.21
First tertile (ref.)	112/351 (31.9%)	1.00	-	1.00	-	1.00	-
Second tertile	74/271 (27.3%)	0.82 (0.62 - 1.11)	0.20	0.84 (0.63 - 1.13)	0.24	0.83 (0.61 - 1.11)	0.21
Third tertile	75/261 (28.7%)	0.85 (0.64 - 1.15)	0.29	0.84 (0.63 - 1.12)	0.24	0.78 (0.57 - 1.05)	0.10
In males			0.48		0.56		0.65
First tertile (ref.)	139/427 (32.6%)	1.00	-	1.00	-	1.00	-
Second tertile	170/506 (33.6%)	1.04 (0.83 - 1.30)	0.73	1.00 (0.80 - 1.25)	0.99	0.97 (0.77 - 1.22)	0.78
Third tertile	158/516 (30.6%)	0.91 (0.73 - 1.15)	0.43	0.90 (0.72 - 1.13)	0.36	0.90 (0.71 - 1.13)	0.37
Cholestanol/Cholesterol							
In females			0.007		0.004		0.032
First tertile (ref.)	90/319 (28.2%)	1.00	-	1.00	-	1.00	-
Second tertile	68/277 (24.5%)	0.85 (0.62 - 1.16)	0.31	0.82 (0.60 - 1.12)	0.22	0.80 (0.58 - 1.09)	0.16
Third tertile	103/287 (35.9%)	1.36 (1.03 - 1.81)	0.032	1.36 (1.03 - 1.81)	0.032	1.21 (0.90 - 1.61)	0.20
In males			0.067		0.12		0.30
First tertile (ref.)	144/459 (31.4%)	1.00	-	1.00	-	1.00	-
Second tertile	153/500 (30.6%)	1.02 (0.81 - 1.28)	0.88	1.02 (0.81 - 1.28)	0.86	1.03 (0.82 - 1.29)	0.82
Third tertile	170/490 (34.7%)	1.26 (1.01 - 1.57)	0.041	1.23 (0.99 - 1.54)	0.067	1.18 (0.94 - 1.48)	0.16

^a unadjusted.

^b adjusted for age.

^c adjusted for age, body mass index, systemic hypertension, diabetes, smoking, log high sensitivity C-reactive protein, treatment group (rosuvastatin vs placebo).

N_{MACE} number of major adverse cardiovascular events; N total number; HR hazard ratio; CI confidence interval; ref. reference

Supplementary Table 4

Title: Effect of rosuvastatin on cardiovascular death according to subgroups

	Placebo N _{CV death} /N (%)	Rosuvastatin N _{CV death} /N (%)	HR (CI 95 %)	p-value	Interaction p-value^a
Overall effect	299/1164 (25.7%)	299/1181 (25.3%)	0.99 (0.84 - 1.16)	0.87	
LDL cholesterol					0.31
First tertile	97/388 (25.0%)	110/392 (28.1%)	1.11 (0.84 - 1.46)	0.46	
Second tertile	95/388 (24.5%)	100/389 (25.7%)	1.07 (0.81 - 1.42)	0.63	
Third tertile	104/382 (27.2%)	89/393 (22.6%)	0.83 (0.63 - 1.11)	0.21	
HDL cholesterol					0.051
First tertile	108/420 (25.7%)	110/387 (28.4%)	1.12 (0.86 - 1.46)	0.42	
Second tertile	114/400 (28.5%)	90/398 (22.6%)	0.76 (0.58 - 1.01)	0.055	
Third tertile	74/338 (21.9%)	99/389 (25.4%)	1.21 (0.90 - 1.64)	0.21	
Non-HDL cholesterol					0.73
First tertile	97/379 (25.6%)	113/400 (28.2%)	1.09 (0.83 - 1.43)	0.54	
Second tertile	99/397 (24.9%)	89/381 (23.4%)	0.95 (0.71 - 1.26)	0.71	
Third tertile	100/382 (26.2%)	97/393 (24.7%)	0.95 (0.72 - 1.26)	0.73	
Apolipoprotein B					0.86
First tertile	104/398 (26.1%)	108/419 (25.8%)	0.95 (0.73 - 1.24)	0.71	
Second tertile	91/384 (23.7%)	95/384 (24.7%)	1.06 (0.80 - 1.42)	0.68	
Third tertile	100/375 (26.7%)	96/371 (25.9%)	1.00 (0.75 - 1.32)	0.99	
Lathosterol/Cholesterol					0.075
First tertile	112/375 (29.9%)	101/403 (25.1%)	0.82 (0.62 - 1.07)	0.14	
Second tertile	90/387 (23.3%)	110/390 (28.2%)	1.27 (0.96 - 1.68)	0.089	
Third tertile	94/396 (23.7%)	88/381 (23.1%)	0.96 (0.72 - 1.28)	0.78	
Cholestanol/Cholesterol					0.45
First tertile	87/382 (22.8%)	96/396 (24.2%)	1.09 (0.82 - 1.46)	0.54	
Second tertile	87/375 (23.2%)	102/402 (25.4%)	1.08 (0.81 - 1.44)	0.58	
Third tertile	122/401 (30.4%)	101/376 (26.9%)	0.88 (0.68 - 1.14)	0.34	

^a Effect of rosuvastatin according to subgroups was assessed using unadjusted Cox model.

N_{CV death} number of cardiovascular deaths; N total number; HR hazard ratio; CI confidence interval; ref. reference