

# **SUPPLEMENTAL MATERIAL**

**Table S1. Variables in the Korean National Health Insurance claim data.**

<b>Category</b>	<b>Variables</b>
<b>Demographic information</b>	Sex, Age, Region, Death, Type of Qualification
<b>Diagnosis</b>	Principal diagnosis, 9 additional diagnosis (ICD-10)
<b>Healthcare utilization</b>	Health and medical care institution, Payment, Day of medical care, Number of visiting day, In-hospital administration of medicine, Procedure, Surgery
<b>Prescription</b>	Name of Drug, Date, Filled days, Quantity dispensed

ICD-10, International Classification of Diseases 10th Revision.

**Table S2. Classification of statin therapy intensity and prescriptions captured in the present study.**

<b>Statin therapy</b>	<b>Statins</b>
<b>The Intensity of statin therapy<sup>1</sup></b>	
High-Intensity Statin Therapy	Atorvastatin (40)-80mg Rosuvastatin 20 (40) mg
Moderate-Intensity Statin Therapy	Atorvastatin 10 (20) mg Rosuvastatin (5) 10 mg Simvastatin 20-40 mg Pravastatin 40 (80) mg Lovastatin 40 mg Fluvastatin XL 80 mg Fluvastatin 40 mg bid Pitavastatin 2-4 mg
Low-Intensity Statin Therapy	Simvastatin 10 mg Pravastatin 10-20 mg Lovastatin 20 mg Fluvastatin XL 80 mg Fluvastatin 20-40 mg Pitavastatin 1 mg
<b>Statin prescriptions captured in the present study</b>	Atorvastatin 5-80 mg Rosuvastatin 5-20 mg Simvastatin 5-40 mg Pravastatin 5-40 mg Lovastatin 20 mg Fluvastatin 20-80 mg Pitavastatin 1-4 mg
<b>Statin-ezetimibe combinations captured in the present study</b>	Atorvastatin 10-40 mg/Ezetimibe 10mg Rosuvastatin 5-20 mg/ Ezetimibe 10mg Simvastatin 5-40 mg/Ezetimibe 10mg

**Table S3. International Classification of Diseases 10th Revision (ICD-10) codes for major comorbid diseases.**

<b>Diseases</b>	<b>ICD-10 codes</b>
<b>Hypertension</b>	I10 ~ I15
<b>Diabetes mellitus</b>	E10 ~ E14
<b>Coronary Heart Disease</b>	I20 ~ I25

**Table S4. International Classification of Diseases 10th Revision (ICD-10) mapping for Charlson Comorbidity Index.<sup>2</sup>**

<b>Diseases</b>	<b>ICD-10 codes</b>	<b>Weight</b>
Myocardial infarction	I21, I22, I252	1
Congestive heart failure	I43, I50, I099, I110, I130, I132, I255, I420, I425, I426, I427, I428, I429, P290	1
Peripheral vascular disease	I70, I71, I731, I738, I739, I771, I790, I792, K551, K558, K559, Z958, Z959	1
Cerebrovascular disease	G45, G46, I60 ~ I69, H340	1
Dementia	F00 ~ F03, G30, F051, G311	1
Chronic Obstructive Pulmonary Disease	J40 ~ J47, J60 ~ J67, I278, I279, J684, J701, J703	1
Connective Tissue Disease	M05, M32 ~ M34, M06, M315, M351, M353, M360	1
Peptic Ulcer Disease	K25 ~ K28	1
Mild Liver Disease	B18, K73, K74, K700, K701 ~ K703, K709, K717, K713, K714, K715, K760, K762 ~ K764, K768, K769, Z944	1
Diabetes without complications	E100, E101, E106, E108 ~ E111, E116, E118 ~ E121, E126, E128 ~ E131, E136, E138 ~ E141, E146, E148, E149	1
Diabetes with complications	E102 ~ E105, E107, E112 ~ E115, E117, E122 ~ E125, E127, E132 ~ E135, E137, E142 ~ E145, E147	2
Paraplegia and Hemiplegia	G81, G82, G041, G114, G801, G802, G830 ~ G834, G839	2
Renal Disease	N18, N19, N052 ~ N057, N250, I120, I131, N032 ~ N037, Z490, Z491, Z492, Z940, Z992	2
Cancer	C00 ~ C26, C30 ~ C34, C37 ~ C41, C43, C45 ~ C58, C60 ~ C76, C81 ~ C85, C88, C90 ~ C97	2
Moderate or Severe Liver Disease	K704, K711, K721, K729, K765, K766, K767, I850, I859, I864, I982	3
Metastatic Carcinoma	C77 ~ C80	6
Acquired immune deficiency syndrome (AIDS)	B20 ~ B22, B24	6

**Table S5. Characteristics of study subjects based on statin ever-use and non-use.\***

<b>Parameters</b>	<b>Groups/ Subgroups</b>	<b>Non-users (N=17,502)</b>	<b>Ever-users (N=47,902)</b>
<b>Age at entry, Means (SD), year</b>	Total	65.6 (14.1)	64.67 (12.5)
<b>Subgroups by age, N (%)</b>	30~39	855 (4.9)	1,571 (3.3)
	40~49	1,865 (10.7)	4,631 (9.7)
	50~59	2,912(16.6)	9,617 (20.1)
	60~69	3,777 (21.6)	12,745 (26.6)
	70~	8,093 (46.2)	19,338 (40.4)
<b>Sex, N (%)</b>	Male	11,136 (63.6)	27,310 (57.0)
	Female	6,366 (36.4)	20,592 (43.0)
<b>Hypertension, N (%)</b>	Yes	15,698 (89.7)	46,932 (98.0)
	No	1,804 (10.3)	970 (2.0)
<b>Diabetes Mellitus, N (%)</b>	Yes	10,732(61.3)	40,296 (84.1)
	No	6,770 (38.7)	7,606 (15.9)
<b>CHD, N (%)</b>	Yes	4,895 (28.0)	26,377 (55.1)
	No	12,607 (72.0)	21,525 (44.9)
<b>CCI, Means (SD)</b>	Total	2.68 (1.9)	3.53 (1.9)
<b>Groups by CCI, N (%)</b>	CCI < 3	9,082 (51.9)	15,757 (32.9)
	CCI ≥ 3	8,420 (48.1)	32,145 (67.1)

\*Statin ever-use or non-use was evaluated in the included patients on hemodialysis during the study period from January 1, 2007, to December 31, 2017, whenever they started statins.

Note that all variables showed statistically significant differences at a p-value of 1%.

SD, standard deviation; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

**Table S6. Baseline characteristics at entry based on statin use.**

Parameters	Variables	Non-users (N=17,502)	Continuous users (N=29,127)	Post-ESRD only users (N=7,282)	Pre-ESRD only users (N=11,493)
<b>Age at entry, Means (SD), year</b>	Total	65.61 (14.1)	64.21(12.0)	62.79 (13.1)	67.01 (12.9)
<b>Subgroups by age, N (%)</b>	30~39	855 (4.9)	838 (2.9)	397 (5.5)	336 (2.9)
	40~49	1,865 (10.7)	2,793 (9.6)	886 (12.2)	952 (8.3)
	50~59	2,912 (16.6)	6,209 (21.3)	1,537 (21.1)	1,871 (16.3)
	60~69	3,777 (21.6)	8,286 (28.5)	1,847 (25.4)	2,612 (22.7)
	70~	8,093 (46.2)	11,001 (37.8)	2,615 (35.9)	5,722 (49.8)
<b>Sex, N (%)</b>	Male	11,136 (63.6)	16,318 (56.0)	4,392 (60.3)	6,600 (57.4)
	Female	6,366 (36.3)	12,809 (44.0)	2,890 (39.7)	4,893 (42.6)
<b>Hypertension, N (%)</b>	Yes	15,698 (89.7)	28,743 (98.7)	6,990 (96.0)	11,199 (97.4)
	No	1,804 (10.3)	384 (1.3)	292 (4.0)	294 (2.6)
<b>Diabetes Mellitus, N (%)</b>	Yes	10,732 (61.3)	25,566 (87.8)	5,377 (73.8)	9,353 (91.4)
	No	6,770 (38.7)	3,561 (12.2)	1,905 (26.2)	2,140 (18.6)
<b>CHD, N (%)</b>	Yes	4,895 (28.0)	17,684 (60.7)	3,684 (50.6)	5,009 (43.6)
	No	12,607 (72.0)	11,443 (39.3)	3,598 (49.4)	6,484 (56.4)
<b>CCI, Means (SD)</b>	Total	2.68 (1.9)	3.77 (1.8)	2.60 (1.9)	3.53 (1.9)
<b>CCI category, N (%)</b>	CCI < 3	9,082 (51.9)	8,017 (27.5)	3,932 (54.0)	3,808 (33.1)
	CCI ≥ 3	8,420 (48.1)	21,110 (72.5)	3,350 (46.0)	7,685 (66.9)

ESRD, end-stage renal disease; SD, standard deviation; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

Note that all variables showed statistically significant differences at a p-value of 1%.

**Table S7. Characteristics of study subjects according to the intensity of statin therapy after entry.**

Parameters	Groups/ Subgroups	Non-users (N=17,502)	Variable-intensity (N=13,592)	High-intensity (N=405)	Moderate-intensity (N=21,928)	Low-or-less- intensity (N=484)
<b>Age at entry, mean (SD), year</b>	Total	65.61 (14.1)	63.81 (11.7)	64.84 (12.7)	63.99 (12.5)	63.4 (13.5)
<b>Subgroups by age, N (%)</b>	30~39	855 (4.9)	387 (2.9)	11 (2.7)	807 (3.7)	30 (6.2)
	40~49	1,865 (10.7)	1,294 (9.5)	51 (12.6)	2,279 (10.4)	55 (11.4)
	50~59	2,912 (16.6)	3,023 (22.2)	67 (16.5)	4,563 (20.8)	93 (19.2)
	60~69	3,777 (21.6)	4,010 (29.5)	99 (24.4)	5,909 (26.9)	115 (23.8)
	70~	8,093 (46.2)	4,878 (35.9)	177 (43.7)	8,370 (38.2)	191 (39.5)
<b>Sex, N (%)</b>	Male	11,136 (63.6)	7,652 (56.3)	269 (66.4)	12,499 (57.0)	290 (66.2)
	Female	6,366 (36.4)	5,940 (43.7)	136 (33.6)	9,429 (43.0)	194 (33.6)
<b>Hypertension, N (%)</b>	Yes	15,698 (89.7)	13,445 (98.9)	384 (94.8)	21,447 (97.8)	457 (94.4)
	No	1,804 (10.3)	147 (1.1)	21 (5.2)	481 (2.2)	27 (5.6)
<b>Diabetes Mellitus, N (%)</b>	Yes	10,732 (61.3)	12,034 (88.5)	310 (76.5)	18,259 (83.3)	340 (70.3)
	No	6,770 (38.7)	1,558 (11.5)	95 (23.5)	3,669 (16.73)	144 (29.8)
<b>CHD, N (%)</b>	Yes	4,895 (27.97)	8,904 (65.5)	237 (58.5)	12,021 (54.8)	206 (42.6)
	No	12,607 (72.0)	4,688 (34.5)	168 (41.5)	9,907 (45.2)	278 (57.4)
<b>CCI, mean (SD)</b>	Total	2.68 (1.9)	3.76(1.9)	2.82 (1.8)	3.43(1.9)	3.02(1.9)
<b>Group by CCI, N (%)</b>	CCI < 3	9,082 (51.9)	3,850 (28.3)	193 (47.7)	7,685 (35.1)	221 (45.7)
	CCI ≥ 3	8,420 (48.1)	9,742 (71.7)	212(52.4)	14,243 (65.0)	263 (54.3)

SD, standard deviation; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

Note that all variables showed statistically significant differences at a p-value of 1%.



**Table S8. Characteristics of patients based on the statin use period after entry: proportion of days covered (PDC) after entry.\***

Parameters	Groups/ Subgroups	Non-users (N=17,502)	Pre-ESRD only users (N=11,493)	PDC after entry*			
				<25% (N=12,447)	≥25 to < 50% (N=5,152)	≥50 to < 75% (N=4,465)	≥75% (N=14,345)
<b>Age at entry, mean (SD), year</b>	total	65.61(14.1)	67.03(12.9)	62.96(12.9)	63.76(12.5)	64.16 (12.0)	64.75 (11.5)
<b>Subgroups by age, N (%)</b>	30~39	855 (4.9)	336 (2.9)	549 (4.4)	188 (3.7)	153 (3.4)	345 (2.4)
	40~49	1,865 (10.7)	962 (8.3)	1,575 (12.7)	532 (10.3)	424 (9.5)	1,148 (8.0)
	50~59	2,912 (16.6)	1,871 (16.3)	2,712 (21.8)	1,142 (22.2)	895 (20.0)	2,997 (20.9)
	60~69	3,777 (21.6)	2,612 (22.7)	3,094 (24.9)	1,386 (26.9)	1,332 (29.8)	4,321 (30.1)
	70~	8,093 (46.2)	5,722 (49.8)	4,517 (36.3)	1,904 (37.0)	1,661 (37.2)	5,534 (38.6)
<b>Sex, N (%)</b>	Male	11,136 (63.6)	6,600 (57.4)	7,069 (56.8)	2,886 (56.0)	2,477 (55.5)	8,278 (57.7)
	Female	6,366 (36.4)	4,893 (42.6)	5,378 (43.2)	2,266 (44.0)	1,988 (44.5)	6,067 (42.3)
<b>Hypertension, N (%)</b>	Yes	15,698 (89.7)	11,342 (97.4)	12,430 (97.9)	5,010 (98.1)	4,360 (97.9)	13,790 (98.5)
	No	1,804 (10.3)	299 (2.6)	268 (2.1)	96 (1.9)	92 (2.1)	215 (1.5)
<b>Diabetes Mellitus, N (%)</b>	Yes	10,732 (61.3)	9,353 (81.4)	10,367 (83.3)	4,399 (85.4)	3,835 (85.9)	12,342 (86.0)
	No	6,770 (38.7)	2,140 (18.6)	2,080 (16.7)	753 (14.6)	630 (14.1)	2,003 (14.0)
<b>CHD, N (%)</b>	Yes	4,895 (28.0)	5,090 (43.7)	6,434 (51.7)	3,018 (58.6)	2,665 (59.7)	9,251 (64.5)
	No	12,607 (72.0)	6,551 (56.3)	6,013 (48.3)	2,134 (41.4)	1,800 (40.3)	5,094 (35.5)
<b>CCI, Means (SD)</b>	total	2.68 (1.9)	3.52(1.9)	3.44(1.9)	3.54 (1.9)	3.55 (1.9)	3.62 (1.9)
<b>Groups by CCI, N (%)</b>	CCI < 3	9,082 (51.9)	3,808 (33.1)	4,336 (34.8)	1,711 (33.2)	1,429 (32.0)	4,473 (31.2)
	CCI ≥ 3	8,420 (48.1)	7,685 (66.9)	81,11 (65.2)	3,441 (66.8)	3,036 (68.0)	9,872 (68.8)

\*PDC was calculated by dividing the number of statin prescription days after entry by the total follow-up period from the initiation of hemodialysis to the end of data collection or mortality event.

ESRD, end-stage renal disease; SD, standard deviation; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

Note that all variables showed statistically significant differences at a p-value of 1%.

**Table S9. All-cause mortality in relation to statin use or non-use after entry, based on various parameters in patients undergoing maintenance hemodialysis.**

Parameters	Statin users after entry		Non-users after entry		Adjusted HRs*			Adjusted HRs†		
	All-Cause mortality	Person-Years	All-Cause mortality	Person-Years	HRs	95% CIs	P values	HR	95% CIs	P values
<b>Whole subjects</b>	17,204/36,409 (47.3%)	145,034.9	19,054/28,995 (65.7%)	77,194.7	0.54	0.53-0.55	<.001	0.52	0.51-0.53	<.001
<b>Age category</b>										
>75 years	4,674/6,585 (71.0%)	16,859.1	7,026/8,243 (85.2%)	12,150.0	0.56	0.54-0.58	<.001	0.55	0.53-0.58	<.001
40 ~ 75 years	12,296/28,589 (43.0%)	121,648.5	11,688/19,561 (59.8%)	59,324.0	0.53	0.52-0.54	<.001	0.51	0.50-0.52	<.001
< 40 years	234/1,235 (18.9%)	6,527.4	340/1,191 (28.5%)	5,720.7	0.61	0.51-0.72	<.001	0.59	0.50-0.70	<.001
<b>Sex</b>										
Men	9,977/20,710 (48.2%)	81,364.9	11,532/17,736 (65.0%)	48,015.1	0.55	0.53-0.56	<.001	0.53	0.52-0.55	<.001
Women	7,227/15,699 (46.0%)	63,670.0	7,522/11,259 (66.8%)	29,179.6	0.52	0.50-0.54	<.001	0.51	0.49-0.52	<.001
<b>Hypertension</b>										
Yes	16,786/35,733 (47.0%)	143,122.5	17,318/26,897 (64.4%)	3,165.1	0.56	0.55-0.57	<.001	0.54	0.53-0.55	<.001
No	418/676 (61.8%)	1,912.5	1,736/2,098 (82.7%)	74,029.6	0.48	0.43-0.54	<.001	0.47	0.42-0.53	<.001
<b>Diabetes</b>										
Yes	14,726/30,943 (47.6%)	123,498.7	13,127/20,085 (65.4%)	55,095.6	0.56	0.54-0.57	<.001	0.54	0.53-0.55	<.001
No	2,478/5,466 (45.3%)	21,536.2	5,927/8,910 (66.5%)	22,099.1	0.49	0.47-0.51	<.001	0.49	0.46-0.51	<.001
<b>CHD</b>										
Yes	10,617/21,368 (49.7%)	85,388.9	6,641/9,904 (67.1%)	26,881.5	0.57	0.55-0.58	<.001	0.55	0.53-0.56	<.001
No	6,587/15,041 (43.8%)	59,646.1	12,413/19,091 (65.0%)	50,313.2	0.53	0.51-0.54	<.001	0.52	0.50-0.53	<.001
<b>Ezetimibe combination</b>										
Yes	2,281/6,169 (37.0%)	25,144.52	610/974 (62.6%)	2,179.4	0.36	0.33-0.39	<.001	0.35	0.32-0.39	<.001
No	14,923/30,240 (49.3%)	119,890.4	18,444/28,021 (65.8%)	75,015.3	0.56	0.55-0.57	<.001	0.54	0.53-0.56	<.001
<b>CCI</b>										
<3	4,767/11,949 (40.0%)	50,442.8	7,741/12,890 (60.1%)	37,081.0	0.51	0.49-0.53	<.001	**		
≥3	12,437/24,460 (50.8%)	94,592.1	11,313/16,105 (70.2%)	40,113.7	0.53	0.51-0.54	<.001	**		

\*Adjusted for age and sex; †adjusted for age, sex, and CCI.

HR, hazard ratio; CI, confidence interval; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

**Table S10. Characteristics of study patients before and after propensity score matching.**

Parameters	Before Matching				P Values	After Matching				
	Statin users (n=47,902)		Non-users (n=17,502)			Statin users (n=27,763)		Non users (n=16,417)		P Values
<b>Sex, N (%)</b>					<.001					<.001
<b>Male</b>	27,310	(57.0%)	11,136	(63.6%)		15,338	(55.3%)	10,491	(63.9%)	
<b>Female</b>	20,592	(43.0%)	6,366	(36.4%)		12,425	(44.8%)	5,926	(36.1%)	
<b>Subgroups by age, N (%)</b>	59.4 ± 12.4		61.1 ± 14.0		<.001	59.5 ± 12.9		61.1 ± 13.9		<.001
<b>30~39</b>	628	(1.3%)	294	(1.7%)	<.001	442	(1.6%)	266	(1.6%)	<.001
<b>40~49</b>	2,764	(5.5%)	1,214	(6.9%)		1,805	(6.5%)	1,114	(6.8%)	
<b>50~59</b>	7,294	(15.3%)	2,414	(13.8%)		4,232	(15.2%)	2,247	(13.7%)	
<b>60~69</b>	11,254	(23.5%)	3,255	(18.6%)		6,129	(22.1%)	3,083	(18.8%)	
<b>70~79</b>	15,128	(31.6%)	4,708	(26.9%)		8,360	(30.1%)	4,497	(27.4%)	
<b>80~</b>	10,834	(22.6%)	5,617	(32.1%)		6,795	(24.5%)	5,210	(31.7%)	
<b>Medical Aids Beneficiaries</b>	4,868	(10.2%)	1,983	(11.3%)	<.001	3,023	(10.9%)	1,812	(11.1%)	0.628
<b>Constantly prescribed at the same medical facility</b>	40,559	(84.7%)	14,468	(82.7%)	0.067	23,239	(83.7%)	13,716	(83.6%)	0.897
<b>Healthcare facility</b>										
<b>Tertiary and educational</b>	6,337	(13.3%)	2,488	(14.7%)	<.001	3,819	(13.7%)	2,323	(14.2%)	0.039
<b>Tertiary hospital</b>	17,176	(35.9%)	6,553	(14.2%)		10,255	(36.9%)	6,149	(37.5%)	
<b>General hospital</b>	3,347	(7.0%)	1,280	(37.4%)		2,067	(7.5%)	1,202	(7.3%)	
<b>Clinics</b>	15,976	(33.4%)	4,616	(7.3%)		8,076	(29.1%)	4,540	(27.7%)	
<b>Others</b>	5,066	(10.6%)	2,565	(26.4%)		3,546	(12.8%)	2,203	(13.4%)	
<b>CCI</b>	3.5 ± 1.9		2.7 ± 1.9		<.001	3.0 ± 1.8		2.8 ± 1.9		<.001
<b>Specific medical care within one year before entry</b>										
<b>Emergency room visit</b>	0.5 ± 1.2		0.4 ± 1.3		0.010	0.4 ± 1.2		0.4 ± 1.2		0.256
<b>Hospitalization</b>	3.2 ± 3.4		3.2 ± 3.5		0.974	3.2 ± 3.5		3.2 ± 3.4		0.608

CCI, Charlson Comorbidity Index.

**Table S11. Association between statin use and all-cause mortality in patients undergoing maintenance hemodialysis after propensity score matching.**

Parameters related with statin use	All-Cause mortality	All patients	Person-Years	Adjusted model-1*			Adjusted model-2†			Adjusted model-3‡		
				HRs	95% CIs	P values	HRs	95% CIs	P values	HRs	95% CIs	P values
<b>Non-users</b>	10,587	16,417	48,228.2	Ref	-	-	Ref	-	-	Ref	-	-
<b>Statin ever-use</b>												
Ever-users	14,181	27,763	97,657.8	0.71	0.69-0.73	<.001	0.70	0.68-0.72	<.001	0.73	0.71-0.75	<.001
Over 3 months	12,146	24,766	88,998.1	0.67	0.65-0.69	<.001	0.66	0.64-0.68	<.001	0.68	0.66-0.70	<.001
<b>Statin use status during the study period</b>												
Pre-ESRD only users	5,127	7,576	16,570.2	1.27	1.23-1.32	<.001	1.26	1.22-1.30	<.001	1.274	1.23-1.32	<.001
Continuous users	6,958	15,336	5,7426.2	0.59	0.58-0.61	<.001	0.58	0.56-0.60	<.001	0.60	0.58-0.62	<.001
Post-ESRD only users	2,096	4,851	23,661.4	0.48	0.46-0.50	<.001	0.49	0.47-1.52	<.001	0.50	0.48-0.53	<.001
<b>Statin use period after entry: Proportion of days covered (PDC)</b>												
PDC < 25%	3,479	7,253	3,859.2	0.59	0.56-0.61	<.001	0.58	0.56-0.61	<.001	0.59	0.57-0.62	<.001
25 ≤ PDC < 50%	1,389	2,868	11,823.7	0.61	0.58-0.65	<.001	0.60	0.57-0.64	<.001	0.62	0.59-0.66	<.001
50 ≤ PDC < 75%	1,162	2,456	9,820.4	0.59	0.55-0.62	<.001	0.58	0.55-0.62	<.001	0.60	0.57-0.64	<.001
PDC ≥75%	3,024	7,610	28,184.5	0.51	0.49-0.53	<.001	0.50	0.48-0.53	<.001	0.52	0.50-0.54	<.001

**The intensity of statin therapy after entry**

Variable-intensity	3,102	7,082	28,830.2	0.55	0.52-0.57	<.001	0.53	0.51-0.56	<.001	0.56	0.54-0.59	<.001
High-intensity	155	262	947.6	0.78	0.67-0.91	0.002	0.80	0.69-0.94	0.007	0.81	0.69-0.95	0.008
Moderate-intensity	5,637	12,522	50,086.8	0.56	0.55-0.58	<.001	0.56	0.54-0.58	<.001	0.57	0.55-0.59	<.001
Low-or-less-intensity	160	321	1,223.1	0.69	0.59-0.80	<.001	0.70	0.60-0.82	<.001	0.76	0.65-0.89	<.001

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\*Adjusted for age and sex; †adjusted for age, sex, and CCI; ‡adjusted for age, sex, CCI, and ezetimibe.

HR, hazard ratio; CI, confidence interval; ESRD, end-stage renal disease; CCI, Charlson Comorbidity Index.

**Table S12. All-cause mortality according to various parameters in patients undergoing maintenance hemodialysis in relation to statin use or non-use after entry after propensity score matching.**

Parameters	Statin users after entry		Non-users after entry		Adjusted HRs*			Adjusted HRs†		
	All-Cause mortality	Person-Years	All-Cause mortality	Person-Years	HRs	95% CIs	P values	HR	95% CIs	P values
<b>Whole subjects</b>	9,054/20,187 (44.9%)	64,798.4	15,714/23,993 (65.5%)	81,087.6	0.53	0.52-0.54	<.001	0.52	0.51-0.54	<.001
<b>Age category</b>										
>75 years	1,188/1,435 (82.8%)	4,478	3,110/3,360 (92.6%)	3,654.1	0.57	0.53-0.61	<.001	0.57	0.53-0.60	<.001
40 ~ 75 years	7,566/17,039 (44.4%)	52,065.6	12,074/18,719 (64.5%)	69,335.4	0.52	0.51-0.54	<.001	0.52	0.51-0.54	<.001
< 40 years	300/1,713 (17.5%)	8,254.8	530/1,914 (27.7%)	8,098.1	0.58	0.50-0.67	<.001	0.57	0.50-0.66	<.001
<b>Sex</b>										
Men	5,095/11,115 (45.8%)	40,197.4	9,568/14,714 (65.0%)	44,002.2	0.54	0.52-0.56	<.001	0.53	0.52-0.55	<.001
Women	3,959/9,072 (43.9%)	24,600.9	6,146/9,279 (66.2%)	37,085.4	0.51	0.49-0.53	<.001	0.51	0.49-0.53	<.001
<b>Hypertension</b>										
Yes	8,759/19,700 (44.5%)	2,559.5	14,328/22,318 (64.2%)	1,373.2	0.54	0.53-0.56	<.001	0.54	0.52-0.55	<.001
No	295/487 (60.6%)	62,238.9	1,386/1,675 (82.7%)	79,714.4	0.50	0.44-0.57	<.001	0.50	0.44-0.56	<.001
<b>Diabetes</b>										
Yes	6,744/15,016 (44.9%)	19,911.2	10,664/16,237 (65.7%)	20,437.9	0.53	0.52-0.55	<.001	0.53	0.51-0.54	<.001
No	2,310/5,171 (44.7%)	44,887.2	5,050/7,756 (65.1%)	60,649.7	0.51	0.48-0.53	<.001	0.51	0.48-0.53	<.001
<b>CHD</b>										
Yes	5,246/10,977 (47.8%)	42,864.4	5,264/7,899 (66.6%)	36,746.5	0.56	0.54-0.58	<.001	0.55	0.53-0.58	<.001
No	3,808/9,210 (41.3%)	21,934.0	10,450/16,094 (64.9%)	44,341.1	0.51	0.49-0.53	<.001	0.51	0.49-0.53	<.001
<b>Ezetimibe combination</b>										
Yes	1,139/3,261 (34.9%)	63,525.9	385/603 (63.8%)	67,726.5	0.32	0.28-0.36	<.001	0.32	0.28-0.36	<.001
No	7,915/16,926 (46.8%)	12,72.4	15,329/23,390 (65.5%)	13,361.1	0.55	0.53-0.56	<.001	0.54	0.53-0.56	<.001
<b>CCI</b>										
<3	3,542/9,138 (38.8%)	33,304.9	6,688/11,289 (59.2%)	38,758.5	0.52	0.50-0.54	<.001			
≥3	5,512/11,049 (49.9%)	31,493.4	9,026/12,704 (71.0%)	42,329.1	0.52	0.50-0.54	<.001			

\*Adjusted for age and sex; †adjusted for age, sex, and CCI.

HR, hazard ratio; CI, confidence interval; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

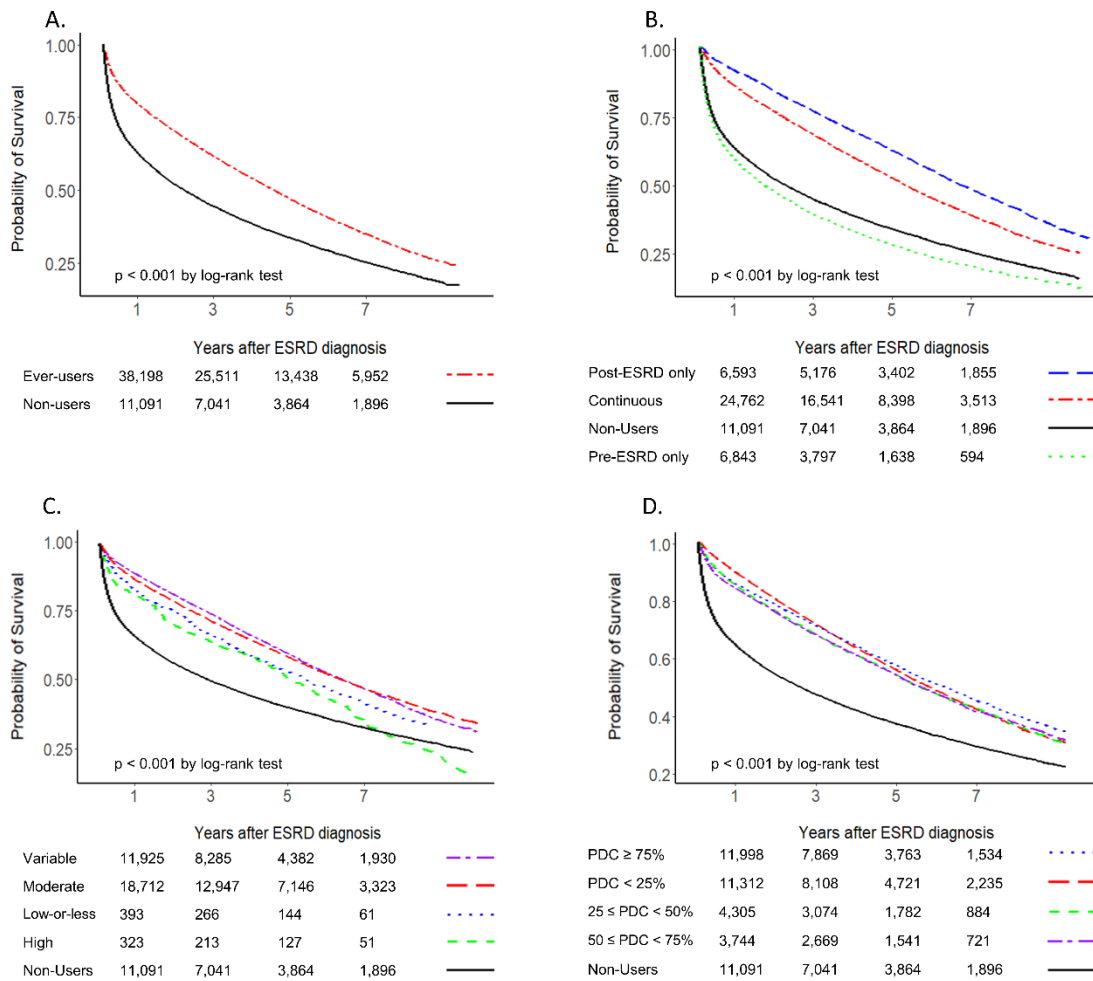
**Table S13. All-cause mortality with lipophilic statins versus hydrophilic statins, based on various parameters in patients undergoing maintenance hemodialysis.**

Parameters	Hydrophilic statin users (Reference)		Lipophilic statin users		Adjusted HRs*			Adjusted HRs†		
	All-Cause mortality	Person-Years	All-Cause mortality	Person-Years	HRs	95% CIs	P Values	HRs	95% CIs	P values
<b>Total</b>	1,644/2,832 (58.1%)	9,452.8	13,141/23,680 (55.4%)	80,405.3	0.93	0.88-0.97	0.004	0.92	0.88-0.97	0.002
<b>Age Groups</b>										
>75 years	249/271 (91.9%)	442.4	1,961/2,230 (87.9%)	4,337.8	0.84	0.74-0.96	0.001	0.86	0.76-0.97	0.01
40 ~ 75 years	1,359/2,340 (58.1%)	7,994.8	10,818/19,774 (54.7%)	68,494.6	0.93	0.88-0.99	0.017	0.93	0.88-0.98	0.01
< 40 years	36/221 (16.3%)	1,015.6	362/1,676 (21.6%)	7,572.9	1.34	0.95-1.89	0.09	1.25	0.88-1.77	0.20
<b>Sex</b>										
Men	1,014/1,749 (58.0%)	5,922.2	7,567/13,651 (55.4%)	46,336.3	0.95	0.89-1.01	0.11	0.94	0.88-1.00	0.06
Women	630/1,083 (58.2%)	3,530.7	5,574/10,029 (55.6%)	34,069.0	0.87	0.80-0.95	0.01	0.87	0.80-0.94	0.001
<b>Hypertension</b>										
Yes	1,559/2,724 (57.2%)	195.3	12,711/23,083 (55.0%)	1,316.2	0.93	0.88-0.98	0.01	0.93	0.88-0.98	0.004
No	85/108 (78.7%)	9,257.5	430/597 (72.1%)	79,089.1	0.81	0.64-1.03	0.004	0.80	0.63-1.02	0.07
<b>Diabetes</b>										
Yes	1,264/2,183 (57.9%)	2,056.2	10,732/19,305 (55.6%)	14,145.7	0.94	0.89-1.00	0.04	0.93	0.88-0.99	0.02
No	380/649 (58.6%)	7,396.6	2,409/4,375 (55.1%)	66,259.6	0.86	0.77-0.96	0.006	0.87	0.78-0.97	0.009
<b>CHD</b>										
Yes	889/1,453 (61.1%)	4,713.7	6,693/11,690 (57.3%)	39,828.5	0.87	0.81-0.93	<.001	0.86	0.80-0.93	<.001
No	755/1,379 (54.7%)	4,739.1	6,448/11,990 (53.8%)	40,576.8	0.98	0.91-1.05	0.54	0.97	0.90-1.05	0.43
<b>Ezetimibe combination</b>										
Yes	5/37 (13.5%)	169.4	1,304/2,854 (45.7%)	10,206	3.55	1.47-8.54	0.005	3.39	1.41-8.15	0.007
No	1,639/2,795 (58.6%)	9,283.4	11,837/20,826 (56.8%)	70,199.2	0.93	0.88-0.98	0.006	0.75	0.75-0.80	<.001
<b>CCI</b>										
<3	548/1,115 (49.1%)	3,923.4	4,148/8,470 (49.0%)	30,658.7	0.92	0.84-1.01	0.067	-	-	-
≥3	1,096/1,717 (63.8%)	5,529.4	8,993/15,210 (59.1%)	49,746.6	0.91	0.86-0.97	0.004	-	-	-

\*Adjusted for age and sex; †adjusted for age, sex, and CCI.

HR, hazard ratio; CI, confidence interval; CHD, coronary heart disease; CCI, Charlson Comorbidity Index.

**Figure S1. Kaplan-Meier curves for crude all-cause mortality related to statin therapy use according to various conditions in adult patients undergoing maintenance hemodialysis.**



**A, Statin ever-users versus non-users. B, Statin use before and after entry (initiation of hemodialysis). C, The intensity of statin therapy. D, Prescription maintenance of statin therapy, as determined by the proportion of days covered. Note that the plot lines for the two PDC groups (25 to <50% and 50 to <75%) overlap completely. ESRD, end-stage renal disease.**



## Supplemental References:

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