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The Underutilization, Adverse Reactions and Efficacy of Statins after Liver Transplant: A Meta-Analysis and Systematic Review

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Table S1. Summary of meta-analyses.

Population	Author, Year	Sample Size/N (Statin/Total)	Outcomes
Renal Transplant	Huang et al. 2020	335/685	Statins improved the lipid profile of kidney transplant recipients (significantly reduced TC and LDL levels, no effects on HDL and TG levels).
	Hwang et al. 2019	3522/7042	MACEs were 1.547 times more common in the non-statin group than in the Fluvastatin group (*P*=0.001).
	Rostami et al. 2017	1870/5209	Statins has no protective effect on transplant rejection, graft survival or patient survival after kidney transplantation. The effect of statins on graft survival, however, was significant when adjusted for factors such as age, sex, and serum creatinine level (HR, 0.80; 95% CI, 0.69 to 0.92; *P*=0.003). Similarly, patient survival was significantly better with statin use (adjusted HR, 0.75; 95% CI, 0.63 to 0.88; *P*=0.003).
	Palmer et al. 2014	NA/3465	Statins may reduce MACEs (1 study, 2102 participants: RR 0.84, CI 0.66 to 1.06), cardiovascular mortality (4 studies, 2322 participants: RR 0.68, CI 0.45 to 1.01), and fatal or non-fatal myocardial infarction (1 study, 2102 participants: RR 0.70, CI 0.48 to 1.01). Statins had uncertain effects on all-cause mortality (6 studies, 2760 participants: RR 1.08, CI 0.63 to 1.83); fatal or non-fatal stroke (1 study, 2102 participants: RR 1.18, CI 0.85 to 1.63); creatine kinase elevation (3 studies, 2233 participants: RR 0.86, CI 0.39 to 1.89); liver enzyme elevation (4 studies, 608 participants: RR 0.62, CI 0.33 to 1.19); withdrawal due to adverse events (9 studies, 2810 participants: RR 0.89, CI 0.74 to 1.06); and cancer (1 study, 2094 participants: RR 0.94, CI 0.82 to 1.07). Statins significantly reduced serum TC (12 studies, 3070 participants: MD −42.43 mg/dL, CI −51.22 to −33.65); LDL (11 studies, 3004 participants: MD −43.19 mg/dL, CI −52.59 to −33.78); serum TG (11 studies, 3012 participants: MD −27.28 mg/dL, CI −34.29 to −20.27); and lowered HDL cholesterol (11 studies, 3005 participants: MD −5.69 mg/dL, CI −10.35 to −1.03). Statins had uncertain effects on kidney function: ESKD (6 studies, 2740 participants: RR 1.14, CI 0.94 to 1.37); proteinuria (2 studies, 136 participants: MD −0.04 g/24 h, CI −0.17 to 0.25); acute allograft rejection (4 studies, 582 participants: RR 0.88, CI 0.61 to 1.28); and GFR (1 study, 62 participants: MD −1.00 mL/min, CI −9.96 to 7.96).
Cardiac Transplant	Vallakati et al. 2016	1635/2295	The use of statins was associated with significant reduction in all-cause mortality (odds ratio, 0.26; 95% confidence interval, 0.20–0.35; *P*<0.0001). Statins also decreased the odds of hemodynamically significant/fatal rejection (odds ratio, 0.37; 95% confidence interval, 0.21–0.65; *P*=0.0005), incidence of coronary vasculopathy (odds ratio, 0.33; 95% confidence interval, 0.16–0.68; *P*=0.003), and terminal cancer (odds ratio, 0.30; 95% confidence interval, 0.15–0.63; *P*=0.002).
	Som et al. 2014	211/353	Studies reporting incidence or severity of GVD suggest that statins do confer benefit. Survival benefit from statin use is modest. There is a low

	incidence of adverse events attributable to statins. There was no difference in the overall number of episodes of rejection.

Legend: TC total cholesterol; LDL low-density lipoprotein; HDL high-density lipoprotein; TG triglyceride; MACE major adverse cardiac event; ESKD end-stage kidney disease; GFR glomerular filtration rate; GVD graft vessel disease; NA no data reported.