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Statins are associated with reduced mortality and morbidity in primary sclerosing cholangitis (PSC)

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Background and Aims: There is increasing evidence that statins is beneficial in chronic liver and cholestatic liver disease. The aim was to study the impact of exposure of different drugs including statins on death, liver transplantation, liver cancer and variceal bleeding in patients with primary sclerosing cholangitis.

Method: We performed a register-based cohort study of patients with a diagnosis of PSC between 2005 and 2016 in Sweden (n=2 914). PSC was defined using the combination of the ICD-10 codes for cholangitis (K830) and either ulcerative colitis, UC (K51), or Crohn's disease, CD (K50). Data from the Patient Register, the Prescribed Drug Register, the Death Certificate Register were used. Use of drugs with possible positive effects on liver disease and its progression were studied. Outcomes were, death, liver transplantation (LT), liver cancer and bleeding esophageal varices.

Results: Mean age (IQR) at PSC diagnosis was 41.4 (25.6-56.1) years. The total follow up time were 11 769 years and 3.4% was transplanted and 19.9 % died during the study period. There were 58% of the patients who had UC, 13% had CD and 29% had been diagnosed with both CD and UC during the study. Frequency of drug use were: UDCA 60.2%, 5-ASA 74.4%, azathioprine/mercaptopurins 33.7%, antibiotics 91%, antimycotics 12.1%, metronidazole 34.2%, corticosteroids 69.3% and statins 13.9%. Hazard ratios (CI: 95%) for all-cause mortality and the combined endpoints death or LT and death or LT, liver cancer or variceal bleeding are shown in Table 1.

Conclusion: Statins and azathioprine use were associated with decreased risks of death, liver transplantation and variceal bleeding in patients with PSC. UDCA was not associated with a reduced mortality.

Figure: (Table1) Hazard ratios CI:95%) for death, liver transplantation or variceal bleeding with use of different drugs in 2914 patients with PSC

	All-cause mortality N=2 914	Death or LT N= 2 794	Death, LT, liver cancer or variceal bleeding N=2 740
UDCA	1.04 (0.87-1.25)	1.34 (1.12-1.62)	1.45 (1.24-2.80)
5-ASA	0.91 (0.77-1.09)	0.90 (0.74-1.09)	0.97 (0.80-1.18)
Azathioprine	0.66 (0.52-0.84)	0.65 (0.50-0.83)	0.72 (0.56-0.93)
Antibiotics	1.70 (1.27-2.29)	2.27 (1.70-3.05)	1.99 (1.52-2.61)
Antimycotics	2.78 (2.24-3.44)	3.13 (2.48-3.94)	2.43 (1.88-3.13)
Metronidazole	1.27 (1.06-1.53)	1.20 (0.99-1.47)	1.31 (1.07-1.59)
Corticosteroids	1.94 (1.60-2.34)	2.14 (1.75-2.60)	1.68 (1.39-2.04)
Statins	0.68 (0.54-0.88)	0.50 (0.28-0.66)	0.54 (0.41-0.71)