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Aspirin and statin use and mortality in patients with community-acquired bacteraemia: population-based propensity score matched cohort studies

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Introduction and purpose

Infections may trigger acute cardiovascular events. Aspirin and statin are pivotal for the prevention of acute cardiovascular events, and may ameliorate the pro-inflammatory and pro-coagulatory processes of bacteraemia. We sought to examine the association between current use of aspirin and statins and risk for mortality as well as acute myocardial infarction and stroke after community-acquired bacteraemia (CAB).

Methods

Population-based cohort study in Northern Denmark, 2003-2010.
Prospective data from the North Denmark Bacteraemia Research Database and health-care databases.

Adult non-surgical patients with first-time CAB (n=2,189).

Two separate propensity score matched sub-cohorts of aspirin users/non-users (n=990) and statin users/non-users (n=676).

Matching performed on age, gender, marital status, calendar-time, and the 19 comorbidities in the Charlson comorbidity index, alcohol-related diagnoses, and use of Beta-blockers, ACE-inhibitors, antidiabetics, disulfiram, oral glucocorticoids, and pre-admission systemic antibiotics.

Risk differences, risk ratios and mortality rate ratios (MRR) adjusted for potential confounders by propensity score matching.

Results

See Figure 1, Table 1 and 2.

Figure 1. Mortality curves for propensity-matched patients with CAB by aspirin use (A) and statin use (B).

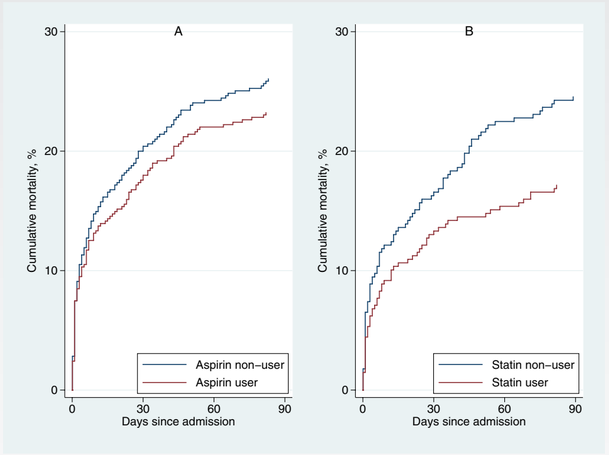

Table 1. Mortality after CAB by aspirin and statin use.

	Dead, n/N (%)	Risk difference, % (95% CI)	MRR (95% CI)
0-30 days			
Aspirin non-user	101/495 (20.4)	(ref)	(ref)
Aspirin user	89/495 (17.8)	-2.4 (-7.3-2.5)	0.9 (0.7-1.2)
Statin non-user	56/338 (16.6)	(ref)	(ref)
Statin user	45/338 (13.3)	-3.3 (-8.6-2.1)	0.8 (0.5-1.2)
0-90 days			
Aspirin non-user	129/495 (26.1)	(ref)	(ref)
Aspirin user	115/495 (23.2)	-2.8 (-8.2-2.5)	0.9 (0.7-1.1)
Statin non-user	83/338 (24.6)	(ref)	(ref)
Statin user	58/338 (17.2)	-7.4 (-13.5--1.3)	0.7 (0.5-0.9)

Table 2. Myocardial infarction and ischemic stroke after CAB by aspirin and statin use.

	AMI/AIS, n/N (%)	Risk difference, % (95% CI)	Risk ratio, (95% CI)
0-30 days			
Aspirin non-user	22/495 (4.4)	(ref)	(ref)
Aspirin user	20/495 (4.0)	-0.4 (-2.9-2.1)	0.9 (0.5-1.6)
Statin non-user	12/338 (3.6)	(ref)	(ref)
Statin user	12/338 (3.6)	0 (-2.8-2.8)	1.0 (0.5-2.2)
0-90 days			
Aspirin non-user	25/495 (5.1)	(ref)	(ref)
Aspirin user	22/495 (4.4)	-0.6 (-3.3-2.0)	0.9 (0.5-1.5)
Statin non-user	14/338 (4.1)	(ref)	(ref)
Statin user	14/338 (4.1)	0 (-3.0-3.0)	1.0 (0.5-2.1)

Abbreviations: AMI, acute myocardial infarction, AIS, acute ischemic stroke

Conclusion

Statin use, but not aspirin use, is associated with a decreased risk for death within 90 days after community-acquired bacteraemia.

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