

## Electronic supplementary material

**ESM Table 3** Results of the final Cox regression model for all-cause mortality (reference group: human insulin) based on data for 127,031 patients

Covariate	Regression coefficient estimate	Standard error	<i>p</i> value
Aspart	-0.0958	0.1008	0.34
Lispro	-0.0374	0.0792	0.64
Glargine	-1.4037	0.1957	<0.0001
Female	-1.8667	0.1281	<0.0001
Age (years)	0.0426	0.0017	<0.0001
Number of hospital stays	0.0401	0.0023	<0.0001
Duration of hospital stays (days)	0.0026	0.0001	<0.0001
Mean daily dose (IU)	-0.0256	0.0023	<0.0001
Bavaria	-0.1123	0.0374	0.003
Berlin	0.0286	0.0300	0.34
Brandenburg	0.0594	0.0287	0.04
Bremen	0.1456	0.0583	0.01
Hamburg	0.1193	0.0479	0.01
Hesse	0.0268	0.0265	0.31
Mecklenburg-Western Pomerania	0.0400	0.0315	0.20
Lower Saxony	-0.0366	0.0367	0.32
Rhineland	0.0178	0.0370	0.63
Saarland	-0.0849	0.0453	0.06
Saxony-Anhalt	-0.0117	0.0356	0.74
Schleswig-Holstein	-0.0139	0.0341	0.68
Antirheumatic agents	-0.2404	0.0163	<0.0001
Beta blockers	-0.0611	0.0164	0.0002
Bronchodilators	0.0962	0.0200	<0.0001
Corticosteroids	0.1819	0.0222	<0.0001
Dermatologicals	0.1696	0.0160	<0.0001
Diuretics	0.4148	0.0179	<0.0001
Antigout agents	0.0716	0.0194	0.0002
Gynaecologicals	-0.1154	0.0444	0.009
Haematologicals	0.1916	0.0167	<0.0001
Cardiac agents	0.1093	0.0163	<0.0001
Lipid-lowering agents	-0.2674	0.0198	<0.0001
Gastrointestinal agents	0.2203	0.0166	<0.0001
Anti-Parkinson agents	0.1214	0.0308	<0.0001
Psychopharmacologicals	0.2158	0.0162	<0.0001
Sex hormones	-0.3463	0.0382	<0.0001
Urologicals	-0.1058	0.0219	<0.0001
Cytostatic agents (prescribed for non-malignant diseases)	0.1464	0.0512	0.004
Interaction terms			
Female×age	0.0190	0.0017	<0.0001
Age×dose	0.0004	0.0000	<0.0001
Aspart×dose	-0.0004	0.0025	0.89
Lispro×dose	-0.0005	0.0019	0.77
Glargine×dose	0.0114	0.0014	<0.0001
Glargine×age	0.0146	0.0024	<0.0001