Supplementary Table 5. Stratification analysis of the incident risk of any hepatobiliary events following zoster vaccination in the propensity score–matched cohort

Any hepatobiliary events	Events, n (%)	Incidence rate[b]	aHR (95% CI)	
			Model 1[c]	Model 2[d]
Sex				
Male				
Unvaccinated	48,498 (15.26)	13.36	1.0 (reference)	1.0 (reference)
Vaccinated	38,516 (11.97)	11.56	0.83 (0.82 to 0.84)[e]	0.83 (0.81 to 0.84)[e]
Female				
Unvaccinated	59,509 (14.40)	16.39	1.0 (reference)	1.0 (reference)
Vaccinated	51,248 (12.52)	15.38	0.89 (0.88 to 0.90)[e]	0.88 (0.87 to 0.89)[e]
Age (yr)				
< 60				
Unvaccinated	39,864 (20.49)	10.98	1.0 (reference)	1.0 (reference)
Vaccinated	31,680 (16.11)	9.50	0.80 (0.79 to 0.81)[e]	0.79 (0.78 to 0.80)[e]
≥ 60				
Unvaccinated	68,143 (12.70)	18.77	1.0 (reference)	1.0 (reference)
Vaccinated	58,084 (10.87)	17.43	0.90 (0.89 to 0.91)[e]	0.90 (0.89 to 0.91)[e]
Region of residence				
Urban				
Unvaccinated	51,703 (15.23)	14.24	1.0 (reference)	1.0 (reference)
Vaccinated	43,767 (12.90)	13.13	0.87 (0.86 to 0.89)[e]	0.87 (0.86 to 0.88)[e]
Rural				
Unvaccinated	56,304 (14.38)	15.51	1.0 (reference)	1.0 (reference)
Vaccinated	45,997 (11.74)	13.80	0.85 (0.84 to 0.87)[e]	0.85 (0.84 to 0.86)[e]
Household income				
Low (0th–39th percentile)				
Unvaccinated	31,985 (15.14)	8.81	1.0 (reference)	1.0 (reference)
Vaccinated	25,622 (12.19)	7.69	0.84 (0.83 to 0.85)[e]	0.83 (0.82 to 0.85)[e]
Middle (40th–79th percentile)				
Unvaccinated	38,874 (14.70)	10.71	1.0 (reference)	1.0 (reference)
Vaccinated	31,858 (12.17)	9.56	0.87 (0.86 to 0.88)[e]	0.86 (0.85 to 0.88)[e]
High (80th–100th percentile)				
Unvaccinated	37,148 (14.55)	10.23	1.0 (reference)	1.0 (reference)
Vaccinated	32,284 (12.46)	9.69	0.88 (0.87 to 0.89)[e]	0.87 (0.86 to 0.89)[e]
Body mass index (kg/m^2)				
< 23.0				
Unvaccinated	26,134 (13.66)	7.20	1.0 (reference)	1.0 (reference)
Vaccinated	22,291 (11.66)	6.69	0.89 (0.87 to 0.90)[e]	0.88 (0.86 to 0.89)[e]
23.0–24.9				
Unvaccinated	28,991 (14.47)	7.99	1.0 (reference)	1.0 (reference)
Vaccinated	23,774 (11.95)	7.13	0.86 (0.85 to 0.88)[e]	0.85 (0.84 to 0.87)[e]
≥ 25.0				
Unvaccinated	52,882 (15.58)	14.57	1.0 (reference)	1.0 (reference)
Vaccinated	43,699 (12.82)	13.11	0.86 (0.84 to 0.87)[e]	0.85 (0.84 to 0.86)[e]

Supplementary Table 5. Continued

Any hepatobiliary events	Events, n (%)	Incidence rate[b]	aHR (95% CI)	
			Model 1[c]	Model 2[d]
Smoking status[a]				
Non-smoker				
Unvaccinated	73,127 (14.47)	20.14	1.0 (reference)	1.0 (reference)
Vaccinated	61,535 (12.29)	18.46	0.88 (0.87 to 0.89)[e]	0.87 (0.86 to 0.88)[e]
Smoker				
Unvaccinated	34,880 (15.45)	9.61	1.0 (reference)	1.0 (reference)
Vaccinated	28,229 (12.26)	8.47	0.84 (0.82 to 0.85)[e]	0.83 (0.82 to 0.84)[e]
Alcohol consumption (day per week)				
< 1				
Unvaccinated	49,116 (12.10)	13.53	1.0 (reference)	1.0 (reference)
Vaccinated	37,859 (9.38)	11.36	0.80 (0.79 to 0.82)[e]	0.80 (0.79 to 0.81)[e]
1–4				
Unvaccinated	56,578 (18.06)	15.59	1.0 (reference)	1.0 (reference)
Vaccinated	49,939 (15.90)	14.98	0.91 (0.90 to 0.92)[e]	0.90 (0.89 to 0.91)[e]
≥ 5				
Unvaccinated	2,313 (19.16)	0.64	1.0 (reference)	1.0 (reference)
Vaccinated	1,966 (14.88)	0.59	0.82 (0.77 to 0.87)[e]	0.81 (0.76 to 0.86)[e]
Physical activity				
Insufficient physical activity				
Unvaccinated	82,946 (14.79)	22.85	1.0 (reference)	1.0 (reference)
Vaccinated	68,386 (12.31)	20.52	0.87 (0.86 to 0.87)[e]	0.86 (0.85 to 0.87)[e]
Sufficient physical activity				
Unvaccinated	25,061 (14.72)	6.90	1.0 (reference)	1.0 (reference)
Vaccinated	21,378 (12.19)	6.41	0.86 (0.85 to 0.88)[e]	0.86 (0.84 to 0.87)[e]
Medication use for coronary artery disease				
No				
Unvaccinated	104,015 (14.76)	28.65	1.0 (reference)	1.0 (reference)
Vaccinated	86,392 (12.25)	25.92	0.86 (0.86 to 0.87)[e]	0.86 (0.85 to 0.87)[e]
Yes				
Unvaccinated	3,992 (15.23)	1.10	1.0 (reference)	1.0 (reference)
Vaccinated	3,372 (13.04)	1.01	0.88 (0.85 to 0.93)[e]	0.88 (0.84 to 0.92)[e]
Medication use for hypertension				
No				
Unvaccinated	71,219 (14.64)	19.62	1.0 (reference)	1.0 (reference)
Vaccinated	57,906 (12.11)	17.37	0.87 (0.86 to 0.88)[e]	0.86 (0.85 to 0.87)[e]
Yes				
Unvaccinated	36,788 (15.04)	10.13	1.0 (reference)	1.0 (reference)
Vaccinated	31,858 (12.59)	9.56	0.85 (0.84 to 0.86)[e]	0.85 (0.84 to 0.86)[e]

Supplementary Table 5. Continued

Any hepatobiliary events	Events, n (%)	Incidence rate[b]	aHR (95% CI)	
			Model 1[c]	Model 2[d]
Medication use for diabetes				
No				
Unvaccinated	93,276 (14.70)	25.70	1.0 (reference)	1.0 (reference)
Vaccinated	76,710 (12.21)	23.01	0.87 (0.86 to 0.88)[e]	0.86 (0.85 to 0.87)[e]
Yes				
Unvaccinated	14,731 (15.25)	4.06	1.0 (reference)	1.0 (reference)
Vaccinated	13,054 (12.68)	3.92	0.84 (0.82 to 0.86)[e]	0.84 (0.82 to 0.86)[e]
Medication use for hyperlipidemia				
No				
Unvaccinated	91,665 (14.65)	25.25	1.0 (reference)	1.0 (reference)
Vaccinated	75,375 (12.17)	22.61	0.87 (0.86 to 0.88)[e]	0.86 (0.85 to 0.87)[e]
Yes				
Unvaccinated	16,342 (15.50)	4.50	1.0 (reference)	1.0 (reference)
Vaccinated	14,389 (12.87)	4.32	0.83 (0.81 to 0.85)[e]	0.83 (0.81 to 0.85)[e]

aHR, adjusted hazard ratio; CI, confidence interval.

[a]Non-smoker indicates individuals who do not currently smoke.

[b]Incidence rate expressed as per 1,000 person-years.

[c]Models 1: adjusted for age (50–54, 55–59, 60-64, and ≥ 65 years) and sex.

[d]Model 2: adjusted for age (50–54, 55–59, 60-64, and ≥ 65 years); sex; household income (low income, middle income, and high income); region of residence (urban and rural); Charlson comorbidity index (0, 1, and ≥ 2); obesity (underweight [< 18.5 kg/m^2], normal [18.5–22.9 kg/m^2], overweight [23.0–24.9 kg/m^2], and obese [≥ 25.0 kg/m^2]); blood pressure (systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg and systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg); fasting blood glucose (< 100 and ≥ 100 mg/dL); glomerular filtration rate (< 60, 60–89, and ≥ 90 mL/min/1.73 m^2); smoking status (non-, ex-, and current smoker); alcohol consumption (drinks; < 1, 1–2, 3–4, and ≥ 5 days per week); aerobic physical activity (sufficient and insufficient); and history of medication use for coronary artery disease, diabetes mellitus, dyslipidemia, and hypertension.

[e]Significant differences ($p < 0.05$).