

Supplement Tables

eTable 1.

ICD-9 CM diagnosis codes of co-morbidities

eTable 2.

Comparison of cancer types between the study groups

eTable 3.

Multivariate analysis of significant covariates in the univariate model included, with/without influenza vaccination status included

eTable 1. ICD-9 CM diagnosis codes of co-morbidities

	ICD-9 CM diagnosis codes
Coronary heart disease	410~414
Congestive heart failure	428.0
Asthma	493
Interstitial lung disease	515
COPD	491, 492, 496
Liver cirrhosis	571.2, 571.5, 571.6
Diabetes mellitus	250
Chronic kidney disease	585
Stroke	430~438
Dementia	290.0

COPD: Chronic obstructive pulmonary disease

eTable 2. Comparison of cancer types between the study groups

Cancer type	Without PPSV23		With PPSV23		<i>p</i> -value
	vaccination		vaccination		
	n = 754		n = 377		
	n	%	n	%	
Colon	110	14.6	49	13.0	0.56
Prostate	109	14.5	45	11.9	
Rectum, rectosigmoid junction, and anus	77	10.2	46	12.2	
Cervix uteri	61	8.1	24	6.4	
Stomach	54	7.2	42	11.1	
Bladder	49	6.5	28	7.4	
Female breast	49	6.5	21	5.6	
Trachea, bronchus and lung	48	6.4	18	4.8	
Liver and intrahepatic bile ducts	30	4.0	26	6.9	
Kidney and other unspecified urinary organs	25	3.3	7	1.9	
Skin	20	2.7	15	4.0	
Larynx	17	2.3	12	3.2	
Others*	105	13.8	44	11.7	

*Other malignancies present in less than 10 patients in both study groups.

eTable 3. Multivariate analysis of significant covariates in the univariate model included, with/without influenza vaccination status included

	Adjusted IRR				Adjusted IRR			
	(with Inf. V. covariate)				(without Inf. V. covariate)			
	aIRR	95% CI		p-value	aIRR	95% CI		p-value
PPSV23 (Without, ref)	1				1			
With	0.697	0.504	0.964	0.029*	0.706	0.516	0.967	0.030*
Gender (Female, ref)	1				1			
Male	1.371	1.009	1.862	0.043*	1.371	1.009	1.862	0.043*
Influenza vaccination (No, ref)	1				–			
Yes	1.065	0.727	1.560	0.748	–			
Cancer treatment modalities								
Chemotherapy (No, ref)	1				1			
Yes	1.374	0.896	2.105	0.145	1.365	0.892	2.088	0.152
Radiotherapy (No, ref)	1				1			
Yes	1.711	1.244	2.353	0.001*	1.710	1.243	2.352	0.001*
Target therapy (No, ref)	1				1			
Yes	2.770	1.504	5.103	0.001*	2.770	1.505	5.100	0.001*
Co-morbidity								
Coronary heart disease (No, ref)	1				1			
Yes	1.123	0.818	1.540	0.473	1.124	0.819	1.542	0.470
Congestive heart failure (No, ref)	1				1			
Yes	2.039	1.522	2.731	<0.001*	2.038	1.521	2.729	<0.001*
Asthma (No, ref)	1				1			
Yes	1.571	1.166	2.116	0.003*	1.574	1.169	2.120	0.003*
COPD (No, ref)	1				1			
Yes	2.079	1.414	3.057	<0.001*	2.088	1.421	3.068	<0.001*
Diabetes mellitus (No, ref)	1				1			
Yes	1.012	0.766	1.337	0.935	1.013	0.767	1.339	0.926
Chronic kidney disease (No, ref)	1				1			
Yes	1.217	0.866	1.711	0.258	1.215	0.865	1.708	0.262
Stroke (No, ref)	1				1			
Yes	1.069	0.798	1.432	0.654	1.071	0.799	1.434	0.647
Dementia (No, ref)	1				1			
Yes	1.938	1.387	2.708	<0.001*	1.939	1.387	2.709	<0.001*

aIRR, adjusted incidence rate ratio; CI, confidence interval; Inf. V., influenza vaccination; Ref., reference; COPD, chronic obstructive pulmonary disease; *P <0.05.