

Online Supplementary Materials

Table S1. Effectiveness of Paxlovid in patients with Omicron variant

	Control (n=565)*	Paxlovid (n=113)	P
Age— yrs	73.0 (68.0-86.0)	78.0 (70.0-87.0)	0.105
Sex— no.			0.225
Male	240	55	
Female	325	58	
Inactivated SARS-CoV-2 vaccine— no.			0.690
0 dose	370	72	
1 dose	6	1	
2 doses	69	15	
Booster	120	25	
Effectively vaccinated —% †	33.5	35.4	
Comorbidity— no. (%)			
Hypertension	230 (40.7)	55 (48.7)	0.117
Diabetes Mellitus	59 (10.4)	19 (16.8)	0.053
Coronary heart disease	58 (10.3)	12 (10.6)	0.910
Cerebrovascular disease	43 (7.6)	17 (15.0)	0.011
Malignant tumor	37 (6.6)	9 (8.0)	0.585
ORF 1ab Ct value on admission	27.9 (24.1-31.6)	27.8 (24.4-30.2)	0.085
N Ct value on admission	26.4 (22.5-30.5)	26.4 (22.8-28.2)	0.116
Time to viral elimination since diagnosis— days	13.0 (10.0-16.0)	9.0 (7.0-13.0)	< 0.001
‡			
Time to viral elimination since admission— days	8.0 (5.0-12.0)	6.0 (5.0-8.0)	< 0.001

* The case and control subjects were matched by age, sex and vaccination rate using SPSS software, version 26.0 (1:5 matching).

† Effectively vaccinated was defined as receiving 2 doses or 3 doses of inactivated SARS-CoV-2 vaccine.

‡ Viral elimination was defined as both negative for ORF1ab and N genes (Ct value ≥ 35) on different days. The first negative day was calculated as the time point of viral elimination.

Time to viral elimination since diagnosis was defined as the time from the first day with a positive result on RT-PCR assay of nasal and pharyngeal swab specimens to the first negative day.

Table S2. Effectiveness of Paxlovid in early (≤ 5 days after diagnosis) and delayed treatment (> 5 days after diagnosis)

	$\leq 5d$ (n=63)	$> 5d$ (n=50)	P
Age— yrs	76.0 (68.0-86.0)	80.5 (72.8-87.3)	0.173
Sex— no.			0.313
Male	28	27	
Female	35	23	
Inactivated SARS-CoV-2 vaccine— no.			0.143
0 dose	36	36	
1 dose	1	0	
2 doses	11	4	
Booster	15	10	
Effectively vaccinated —%	41.3	28.0	
Comorbidity— no. (%)			
Hypertension	30 (47.6)	25 (50.0)	0.801
Diabetes Mellitus	10 (15.9)	9 (18.0)	0.764
Coronary heart disease	5 (7.9)	7 (14.0)	0.299
Cerebrovascular disease	9 (14.3)	8 (16.0)	0.800
Malignant tumor	4 (6.4)	5(10.0)	0.477
ORF 1ab Ct value on admission	29.0 (26.4-31.1)	25.8 (23.4-28.8)	0.544
N Ct value on admission	27.4 (23.7-28.8)	24.2 (21.4-28.0)	0.368
Baseline ORF 1ab Ct value†	28.1 (25.1-30.3)	28.3 (25.5-30.2)	0.101
Baseline N Ct value	26.4 (23.0-28.5)	27.1 (24.2-28.9)	0.124
Time to Paxlovid treatment since diagnosis— days ‡	3.0 (2.0-4.0)	9.0 (7.0-12.0)	< 0.001
Time to viral elimination since Paxlovid treatment— days *	4.0 (3.0-6.0)	3.0 (2.0-5.0)	0.529

* Time to viral elimination since Paxlovid treatment was defined as the time from the first day with Paxlovid treatment to the first negative day.

† Baseline was defined as the day to begin Paxlovid treatment.

‡ Time to Paxlovid treatment since diagnosis was defined as the time from the first positive day to the first day with Paxlovid treatment.

Table S3. Effectiveness of Paxlovid in oldest-old patients

	Control (n=224)*	Paxlovid (n=38)	P
Age—yrs	88.5 (86.3-91.0)	88.0 (87.0-92.0)	0.262
Sex— no.			0.073
Male	78	19	
Female	146	19	
Inactivated SARS-CoV-2 vaccine— no.			
0 dose	199	35	
1 dose	1	0	
2 doses	11	1	
Booster	8	2	
Effectively vaccinated —%	8.48	7.89	0.874
Comorbidity— no. (%)			
Hypertension	93 (41.5)	19 (50.0)	0.328
Diabetes Mellitus	33 (14.7)	5 (12.8)	0.799
Coronary heart disease	33 (14.7)	6 (15.4)	0.866
Cerebrovascular disease	26 (11.6)	11 (28.2)	0.005
Malignant tumor	7 (3.1)	2 (5.3)	0.503
ORF 1ab Ct value on admission	26.0 (22.6-30.4)	26.7 (23.8-30.3)	0.464
N Ct value on admission	24.6 (21.2-29.1)	25.3 (21.6-29.2)	0.570
Time to viral elimination since diagnosis— days	14.0 (11.0-18.0)	10.0 (7.0-14.0)	< 0.001

*The control group was defined as oldest-old patients (age \geq 85 years) without Paxlovid treatment in hospital from April 10 to June 22, 2022.

Table S4. Effectiveness of Paxlovid in early (≤ 5 days after diagnosis) and delayed treatment (> 5 days after diagnosis) in oldest-old patients (age ≥ 85 years)

	$\leq 5d$ (n=17)	$> 5d$ (n=21)	P
Age—yrs	88.0 (87.0-91.5)	88.0 (86.5-93.0)	0.439
Sex— no.			0.744
Male	9	10	
Female	8	11	
Inactivated SARS-CoV-2 vaccine— no.			
0 dose	17	19	
1 dose	0	0	
2 doses	0	1	
Booster	0	2	
Effectively vaccinated —%	0	13.63	0.113
Comorbidity— no. (%)			
Hypertension	8 (47.1)	11 (50.0)	0.855
Diabetes Mellitus	1 (5.9)	2 (9.1)	0.709
Coronary heart disease	2 (11.8)	4 (18.2)	0.582
Cerebrovascular disease	3 (17.7)	9 (40.9)	0.119
Malignant tumor	0 (0.0)	2 (9.1)	0.202
ORF 1ab Ct value on admission	29.2 (26.0-32.5)	25.2 (23.4-29.0)	0.046
N Ct value on admission	28.0 (21.7-31.2)	24.0 (21.5-28.1)	0.132
Baseline ORF 1ab Ct value	29.6 (24.2-33.2)	28.9 (25.6-30.7)	0.768
Baseline N Ct value	28.3 (21.6-31.6)	28.2 (24.5-29.4)	0.778
Time to Paxlovid treatment since diagnosis— day	2.0 (1.0-2.0)	7.0 (3.0-12.0)	< 0.001
Time to viral elimination since Paxlovid treatment(day) — day	4.0 (3.0-5.0)	4.0 (3.0-6.0)	0.964

Table S5. Effectiveness of Paxlovid in patients with malignant solid tumors

	Control (n=47)*	Paxlovid (n=9)	P
Age—yrs	72.0 (67.0-81.0)	76.0 (65.0-86.5)	0.284
Sex— no.			0.008
Male	31	1	
Female	20	8	
Inactivated SARS-CoV-2 vaccine— no.			
0 dose	35	6	
1 dose	0	0	
2 doses	11	1	
Booster	5	2	
Effectively vaccinated —%	31.37	33.33	0.420
ORF 1ab Ct value on admission	26.0 (22.6-30.4)	29.8 (26.4-31.9)	0.039
N Ct value on admission	24.6 (21.2-29.1)	27.9 (25.7-31.3)	0.026
Time to viral elimination since diagnosis— days	14.0 (11.0-17.0)	10.0 (6.0-20.0)	<0.001

Table S6. Effectiveness of Paxlovid in early (≤ 5 days after diagnosis) and delayed treatment (> 5 days after diagnosis) in patients with malignant solid tumors

	$\leq 5d$ (n=4)	$> 5d$ (n=5)	P
Age—yrs	74.0 (63.0-77.0)	86.0 (63.5-88.5)	0.133
Sex— no.			0.343
Male	0	1	
Female	4	4	
Inactivated SARS-CoV-2 vaccine— no.			0.060
0 dose	0	4	
1 dose	0	0	
2 doses	1	0	
Booster	2	0	
Effectively vaccinated —%	75	0	
ORF 1ab Ct value on admission	30.9 (29.9-32.8)	27.9 (25.0-30.2)	0.070
N Ct value on admission	29.7 (27.6-31.3)	27.9 (23.5-30.4)	0.302
Baseline ORF 1ab Ct value	31.9 (28.7-33.9)	26.2 (25.0-29.5)	0.032
Baseline N Ct value	29.8 (26.8-33.5)	24.7 (23.4-29.4)	0.116
Time to Paxlovid treatment since diagnosis— day	3.5 (3.0-4.8)	13.0 (8.5-15)	< 0.001
Time to viral elimination since Paxlovid treatment— day	2.0 (1.0-3.0)	4.0 (3.0-6.0)	0.964