

CLINICAL MANIFESTATION, LABORATORY CHARACTERISTICS, AND OUTCOMES OF  
COVID-19 AND INFLUENZA IN HOSPITALIZED PATIENTS  
AT THE HOSPITAL FOR TROPICAL DISEASES

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Background

Seasonal influenza and COVID-19 are leading causes of severe respiratory disease and hospitalization worldwide, yet comparative data from developing countries remain limited. We evaluated clinical, laboratory, and outcome differences between the two infections in a tertiary care setting in Thailand.

Methods

We performed a retrospective review of medical records for hospitalized patients with laboratory-confirmed COVID-19 (n = 215) and influenza (n = 53), admitted from January 2020 to June 2024 at the Hospital for Tropical Diseases, Bangkok. Demographics, comorbidities, symptoms, laboratory values, complications, intensive care unit (ICU) admission, length of stay, and mortality were analyzed.

Results

Table 1 Baseline characteristic of influenza and COVID-19 patients

Characteristics	Total N (%) <sup>†</sup>	COVID-19 n (%) <sup>†</sup>	Influenza n (%) <sup>†</sup>	p-value
Participants <sup>††</sup>	268	215 (70.2)	53 (19.8)	
Age (years)	53	51	70	<0.001*
Median (IQR)	(32.3-67)	(32-64)	(35-83)	
Sex: Female	155 (57.8)	120 (55.8)	35 (66.0)	0.177**
Nationality				
Thai	255 (95.1)	206 (95.8)	49 (92.4)	0.295***
Foreigners	13 (4.9)	9 (4.2)	4 (7.6)	
Underlying medical conditions				
No disease	94 (35.1)	84 (39.1)	10 (18.9)	0.007**
≥ 1 condition	174 (64.9)	131 (61.4)	43 (81.1)	
Disease-specific conditions				
Hypertension	92 (52.6)	68 (51.9)	24 (55.8)	N/A
Diabetes mellitus	72 (41.1)	54 (41.2)	18 (41.9)	
Obesity	47 (26.9)	38 (29.0)	9 (20.9)	
Ischemic/valvular heart diseases	19 (10.9)	8 (6.1)	11 (25.6)	
Chronic kidney diseases	14 (8.0)	8 (6.1)	6 (14.0)	
Cerebrovascular diseases	12 (6.9)	4 (3.1)	8 (18.6)	
Asthma/COPD/Bronchiectasis	10 (5.7)	4 (3.1)	6 (14.0)	
Cirrhosis	3 (1.7)	2 (1.5)	2 (4.7)	
Immunocompromised status	1 (0.6)	1 (0.8)	0 (0)	
Others:	145 (82.9)	86 (65.6)	31 (72.1)	
History of vaccination	92 (34.7)	79 (37.2)	13 (24.5)	0.082***
COVID-19 vaccine	80 (87.0)	77 (96.2)	3 (23.1)	
Influenza vaccine	12 (13.0)	2 (0.9)	10 (18.9)	
History of recent infection in previous 6 months	9 (3.4)	2 (0.9)	7 (13.2)	<0.001***

IQR, interquartile range; N/A, not applicable; <sup>†</sup> Percentage by column; <sup>††</sup> Percentage by row; \*Two-sample Wilcoxon rank-sum (Mann-Whitney) test; \*\* Pearson's chi-squared test; \*\*\* Exact probability test

Influenza patients were significantly older and had a higher prevalence of underlying comorbidities. Although symptom profiles overlapped, fever, abdominal pain, and nausea/vomiting were more common in influenza. Laboratory and chest x-ray did not demonstrate the difference significantly.

Complication and ICU-admission rates did not differ significantly, but COVID-19 patients had a longer median hospital stay and higher in-hospital mortality.

Table 2 Symptoms of COVID-19 and Influenza

History of symptoms before admission	Total N (%) <sup>†</sup>	COVID-19 <sup>‡</sup> n (%) <sup>†</sup>	Influenza n (%) <sup>†</sup>	p-value
Duration of symptoms (days)				
Median (IQR)	3 (2-5)	4 (2-7)	2 (1-3)	<0.001*
Fever	180 (72.6)	129 (66.2)	51 (96.2)	<0.001**
Cough	177 (71.4)	131 (67.2)	46 (86.8)	0.005**
Runny nose	106 (42.7)	77 (39.5)	29 (54.7)	0.047**
Sore throat	102 (41.1)	82 (42.1)	20 (37.7)	0.571**
Muscle soreness	71 (28.6)	53 (27.2)	18 (34.0)	0.333**
Dyspnea	59 (23.8)	42 (21.5)	17 (32.1)	0.110**
Headache	38 (15.3)	28 (14.4)	10 (18.9)	0.419**
Diarrhea	24 (9.7)	16 (8.2)	8 (15.1)	0.133**
Nausea/vomiting	21 (8.5)	9 (4.6)	12 (22.6)	<0.001***
Chill	14 (5.6)	9 (4.6)	5 (9.4)	0.186***
Abdominal pain	10 (4.0)	5 (2.6)	5 (9.4)	0.039***
Rash	2 (0.8)	1 (0.5)	1 (1.9)	0.382***

IQR, interquartile range; <sup>‡</sup> Asymptomatic COVID-19 patients were excluded; <sup>†</sup> Percentage by column; \* Two-sample Wilcoxon rank-sum (Mann-Whitney) test; \*\* Pearson's chi-squared test; \*\*\* Exact probability test

Table 3 Complications

Complications	Total N (%) <sup>†</sup>	COVID-19 n (%) <sup>†</sup>	Influenza n (%) <sup>†</sup>	p-value
Developed complications	187 (69.8)	156 (72.6)	31 (58.5)	0.046*
COVID-19/Influenza pneumonia	162 (60.4)	146 (67.9)	16 (30.2)	<0.001*
Acute hepatitis	81 (30.2)	70 (32.6)	11 (20.8)	0.094*
Acute kidney injury	46 (17.2)	37 (17.2)	9 (17.0)	0.969*
Bacterial co-infection	15 (5.6)	6 (2.8)	9 (17.0)	<0.001**
Hospital acquired infection	16 (6.0)	14 (6.5)	2 (3.8)	0.746**
Others	41 (15.3)	32 (14.9)	9 (17.0)	0.704*

<sup>†</sup> Percentage by column; \* Pearson's chi-squared test; \*\* Exact probability test

Conclusion

In this cohort, influenza more frequently presents with fever and gastrointestinal symptoms, while COVID-19 is associated with prolonged hospitalization and increased mortality despite similar levels of complications. These findings support targeted resource allocation and strengthen clinical differentiation strategies in settings with overlapping viral respiratory epidemics.

References

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