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February 7, 2020

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China

Dawei Wang, MD¹; Bo Hu, MD¹; Chang Hu, MD¹; [et al](#)

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 Coronavirus Resource Center

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整理日期:2020/02/09

武漢肺炎

新型冠狀病毒 (2019-nCoV)



IMPORTANCE In December 2019, novel coronavirus (2019-nCoV)-infected pneumonia (NCIP) occurred in Wuhan, China. The number of cases has increased rapidly but information on the clinical characteristics of affected patients is limited.

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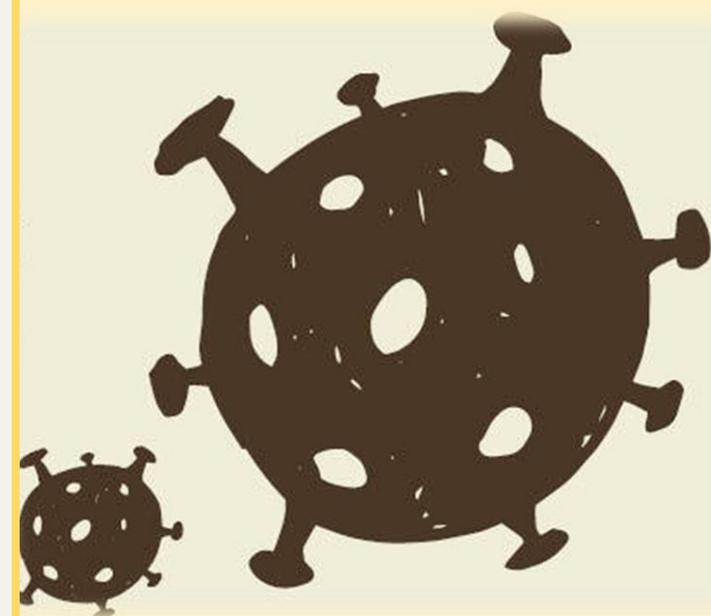
DESIGN, SETTING, AND PARTICIPANTS Retrospective, single-center case series of the 138 consecutive hospitalized patients with confirmed NCIP at Zhongnan Hospital of Wuhan University in Wuhan, China, from January 1 to January 28, 2020; final date of follow-up was February 3, 2020.

EXPOSURES Documented NCIP.

MAIN OUTCOMES AND MEASURES Epidemiological, demographic, clinical, laboratory, radiological, and treatment data were collected and analyzed. Outcomes of critically ill patients and noncritically ill patients were compared. Presumed hospital-related transmission was suspected if a cluster of health professionals or hospitalized patients in the same wards became infected and a possible source of infection could be tracked.

RESULTS Of 138 hospitalized patients with NCIP, the median age was 56 years (interquartile range, 42-68; range, 22-92 years) and 75 (54.3%) were men. Hospital-associated transmission was suspected as the presumed mechanism of infection for affected health professionals (40 [29%]) and hospitalized patients (17 [12.3%]). Common symptoms included fever (136 [98.6%]), fatigue (96 [69.6%]), and dry cough (82 [59.4%]). Lymphopenia (lymphocyte count, $0.8 \times 10^9/L$ [interquartile range {IQR}, 0.6-1.1]) occurred in 97 patients (70.3%), prolonged prothrombin time (13.0 seconds [IQR, 12.3-13.7]) in 80 patients (58%), and elevated lactate dehydrogenase (261 U/L [IQR, 182-403]) in 55 patients (39.9%). Chest computed tomographic scans showed bilateral patchy shadows or ground glass opacity in the lungs of all patients. Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftriaxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). Thirty-six patients (26.1%) were transferred to the intensive care unit (ICU) because of complications, including acute respiratory distress syndrome (22 [61.1%]), arrhythmia (16 [44.4%]), and shock (11 [30.6%]). The median time from first symptom to dyspnea was 5.0 days, to hospital admission was 7.0 days, and to ARDS was 8.0 days. Patients treated in the ICU ($n = 36$), compared with patients not treated in the ICU ($n = 102$), were older (median age, 66 years vs 51 years), were more likely to have underlying comorbidities (26 [72.2%] vs 38 [37.3%]), and were more likely to have dyspnea (23 [63.9%] vs 20 [19.6%]), and anorexia (24 [66.7%] vs 31 [30.4%]). Of the 36 cases in the ICU, 4 (11.1%) received high-flow oxygen therapy, 15 (41.7%) received noninvasive ventilation, and 17 (47.2%) received invasive ventilation (4 were switched to extracorporeal membrane oxygenation). As of February 3, 47 patients (34.1%) were discharged and 6 died (overall mortality, 4.3%), but the remaining patients are still hospitalized. Among those discharged alive ($n = 47$), the median hospital stay was 10 days (IQR, 7.0-14.0).

CONCLUSIONS AND RELEVANCE In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%.



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本篇研究描述罹患新型冠狀病毒肺炎病人的流行病學與臨床表徵 (epidemiological and clinical characteristics)

回溯性分析武漢中南醫院共**138位**2020/01/01 - 01/28 所有確診罹患新型冠狀病毒肺炎之住院病人

年齡中位數：**56歲** (分布:22-98歲，第一四分位(Q1):42歲，第三四分位(Q3):68歲)

男:**75位** (54.3%) : 女:**63位** (45.7%)

疑似院內感染：**57位** (其中**40位**醫療人員，**17位**住院病人)

常見徵候：**發燒**(136, 98.6%)、**倦怠**(96, 69.6%)、**乾咳**(82, 59.4%)、**淋巴球下降**(97, 70.3%)、**凝血時間延長**(80, 58%)、**LDH上升**(55, 39.9%)

所有病人胸部電腦斷層：**兩側片狀或毛玻璃狀陰影**

2020/02/03後，**47位**出院(住院時間中位數10天)，**6位**死亡(死亡率: 4.3%)

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* 138位病人治療方式

大部分接受抗病毒藥物治療

124位(89.9%) :oseltamivir

許多病人有接受抗生素治療

89位(64.4%)moxifloxacin, 34位(24.6%)ceftriaxone, 24位(18.1%)azithromycin

部分接受類固醇治療

62(44.9%)位:glucocorticoid

* 36位轉入加護病房

(22位急性呼吸窘迫(ARDS)、16位心律不整、11位休克)

* 首次症狀出現

到呼吸困難中位數: 5 天

到住院:7.0天

到ARDS:8.0天

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138位住院病人

加護病房 36位		非加護病房 102位	
較老 中位數: 66歲	年紀	較年輕 中位數: 51歲	
較多 (26, 72.2%)	有共病	較少 (38, 37.3%)	
較容易 (23, 63.9%)	呼吸困難	較不容易 (20, 19.6%)	
較容易 (24, 66.7%)	厭食	較不容易 (31, 30.4%)	

4位接受高流量氧氣治療
15位接受非侵入性呼吸器
17位接受侵入性呼吸器

表格一 病人基本資料



Table 1. Baseline Characteristics of Patients Infected With 2019-nCoV

	No. (%)			P Value ^a
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
Age, median (IQR), y	56 (42-68)	66 (57-78)	51 (37-62)	<.001
Sex				
Female	63 (45.7)	14 (38.9)	51 (37-62)	.34
Male	75 (54.3)	22 (61.1)	53 (52.0)	
Huanan Seafood Wholesale Market exposure	12 (8.7)	5 (13.9)	7 (6.9)	.30
Infected				
Hospitalized patients	17 (12.3)	9 (25.0)	8 (7.8)	.02
Medical staff	40 (29)	1 (2.8)	39 (38.2)	<.001
Comorbidities				
Hypertension	43 (31.2)	21 (58.3)	22 (21.6)	<.001
Cardiovascular disease	20 (14.5)	9 (25.0)	11 (10.8)	.04
Diabetes	14 (10.1)	8 (22.2)	6 (5.9)	.009
Malignancy	10 (7.2)	4 (11.1)	6 (5.9)	.29
Cerebrovascular disease	7 (5.1)	6 (16.7)	1 (1.0)	.001
COPD	4 (2.9)	3 (8.3)	1 (1.0)	.054
Chronic kidney disease	4 (2.9)	2 (5.6)	2 (2.0)	.28
Chronic liver disease	4 (2.9)	0	4 (3.9)	.57
HIV infection	2 (1.4)	0	2 (2.0)	>.99
Signs and symptoms				
Fever	136 (98.6)	36 (100)	100 (98.0)	>.99
Fatigue	96 (69.6)	29 (80.6)	67 (65.7)	.10
Dry cough	82 (59.4)	21 (58.3)	61 (59.8)	.88
Anorexia	55 (39.9)	24 (66.7)	31 (30.4)	<.001
Myalgia	48 (34.8)	12 (33.3)	36 (35.3)	.83
Dyspnea	43 (31.2)	23 (63.9)	20 (19.6)	<.001
Expectoration	37 (26.8)	8 (22.2)	29 (28.4)	.35
Pharyngalgia	24 (17.4)	12 (33.3)	12 (11.8)	.003
Diarrhea	14 (10.1)	6 (16.7)	8 (7.8)	.20
Nausea	14 (10.1)	4 (11.1)	10 (9.8)	>.99
Dizziness	13 (9.4)	8 (22.2)	5 (4.9)	.007
Headache	9 (6.5)	3 (8.3)	6 (5.9)	.70
Vomiting	5 (3.6)	3 (8.3)	2 (2.0)	.13
Abdominal pain	3 (2.2)	3 (8.3)	0 (0)	.02
Onset of symptom to, median (IQR), d				
Hospital admission	7.0 (4.0-8.0)	8.0 (4.5-10.0)	6.0 (3.0-7.0)	.009
Dyspnea	5.0 (1.0-10.0)	6.5 (3.0-10.8)	2.5 (0.0-7.3)	.02
ARDS	8.0 (6.0-12.0)	8.0 (6.0-12.0)	8.0 (6.3-11.3)	.97
Heart rate, median (IQR), bpm	88 (78-97)	89 (81-101)	86 (77-96)	.14
Respiratory rate, median (IQR)	20 (19-21)	20 (16-25)	20 (19-21)	.57
Mean arterial pressure, median (IQR), mm Hg	90 (84-97)	91 (78-96)	90 (85-98)	.33

Abbreviations: ARDS, acute respiratory distress syndrome; bpm, beats per minute; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; IQR, interquartile range; 2019-nCoV, 2019 novel coronavirus.

^a P values indicate differences between ICU and non-ICU patients. P < .05 was considered statistically significant.

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JAMA忙中有錯
應該是 female/male: 49/53

	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
年齡中位數 (四分位差)	56 (42-68)	66 (57-78)	51 (37-62)	<0.001
性別(女/男)	63/75	14/22	49/53	0.34
海鮮市場暴露史	12 (8.7)	5	7	0.30
院內感染-醫療人員	40 (29)	1 (2.8)	39 (38.2)	<0.001
院內感染-住院病人	17 (12.3)	9 (25.0)	8 (7.8)	0.02
共病症	64 (46.4)	26 (72.2)	39 (37.3)	<0.001
共病症-高血壓	43 (31.2)	21 (58.3)	22 (21.6)	<0.001
共病症-心血管疾病	20 (14.5)	9 (25.0)	11 (10.8)	0.04
共病症-糖尿病	14 (10.1)	8 (22.2)	6 (5.9)	0.009
共病症-惡性腫瘤	10 (7.2)	4	6	0.29
共病症-腦血管疾病	7 (5.1)	6 (16.7)	1 (1.0)	0.001
共病症-慢性阻塞性肺病	4 (2.9)	3	1	0.054
共病症-慢性腎臟病	4 (2.9)	2	2	0.28
共病症-慢性肝臟病	4 (2.9)	0	4	0.57
共病症-愛滋病	2 (1.4)	0	2	>0.99

加護病房病人年紀較長

高血壓、糖尿病、心血管疾病、
腦血管疾病等共病症較多

常見共病症:

高血壓 (31.2%)
心血管疾病 (14.5%)
糖尿病 (10.1%)
惡性腫瘤 (7.2%)
腦血管疾病 (5.1%)

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Signs and symptoms				
Fever	136 (98.6)	36 (100)	100 (98.0)	>.99
Fatigue	96 (69.6)	29 (80.6)	67 (65.7)	.10
Dry cough	82 (59.4)	21 (58.3)	61 (59.8)	.88
Anorexia	55 (39.9)	24 (66.7)	31 (30.4)	<.001
Myalgia	48 (34.8)	12 (33.3)	36 (35.3)	.83
Dyspnea	43 (31.2)	23 (63.9)	20 (19.6)	<.001
Expectoration	37 (26.8)	8 (22.2)	29 (28.4)	.35
Pharyngalgia	24 (17.4)	12 (33.3)	12 (11.8)	.003
Diarrhea	14 (10.1)	6 (16.7)	8 (7.8)	.20
Nausea	14 (10.1)	4 (11.1)	10 (9.8)	>.99
Dizziness	13 (9.4)	8 (22.2)	5 (4.9)	.007
Headache	9 (6.5)	3 (8.3)	6 (5.9)	.70
Vomiting	5 (3.6)	3 (8.3)	2 (2.0)	.13
Abdominal pain	3 (2.2)	3 (8.3)	0 (0)	.02

	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
徵候				
發燒	136 (98.6)	36	100	>.99
倦怠	96 (69.6)	29	67	.10
乾咳	82 (59.4)	21	61	.88
厭食	55 (39.9)	24 (66.7)	31 (30.4)	<.001
肌肉痠痛	48 (34.8)	12	36	.83
呼吸困難	43 (31.2)	23 (63.9)	20 (19.6)	<.001
咳痰	37 (26.8)	8	29	.35
咽痛	24 (17.4)	12 (33.3)	12 (11.8)	.003
腹瀉	14 (10.1)	6	8	.20
噁心	14 (10.1)	4	10	>.99
頭暈	13 (9.4)	8 (22.2)	5 (4.9)	.007
頭痛	9 (6.5)	3	6	.70
嘔吐	5 (3.6)	3	2	.13
腹痛	3 (2.2)	3 (8.3)	0 (0)	.02

表格一 病人基本資料

	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
徵候				
發燒	136 (98.6)	36	100	>.99
倦怠	96 (69.6)	29	67	.10
乾咳	82 (59.4)	21	61	.88
厭食	55 (39.9)	24 (66.7)	31 (30.4)	<.001
肌肉痠痛	48 (34.8)	12	36	.83
呼吸困難	43 (31.2)	23 (63.9)	20 (19.6)	<.001
咳痰	37 (26.8)	8	29	.35
咽痛	24 (17.4)	12 (33.3)	12 (11.8)	.003
腹瀉	14 (10.1)	6	8	.20
噁心	14 (10.1)	4	10	>.99
頭暈	13 (9.4)	8 (22.2)	5 (4.9)	.007
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嘔吐	5 (3.6)	3	2	.13
腹痛	3 (2.2)	3 (8.3)	0 (0)	.02

常見徵候
 發燒 (98.6%)
 倦怠 (69.6%)
 乾咳 (59.4%)
 厭食 (39.9%)
 肌肉痠痛 (34.8%)
 呼吸困難 (31.2%)

14位病人剛開始表現為腹瀉和噁心，之後1-2天才開始出現發燒和呼吸困難

少見徵候

表格一 病人基本資料

	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
徵候				
發燒	136 (98.6)	36	100	>.99
倦怠	96 (69.6)	29	67	.10
乾咳	82 (59.4)	21	61	.88
厭食	55 (39.9)	24 (66.7)	31 (30.4)	<.001
肌肉痠痛	40 (34.8)	12	36	.83
呼吸困難	43 (31.2)	23 (63.9)	20 (19.6)	<.001
咳痰	37 (26.8)	8	29	.35
咽痛	24 (17.4)	12 (33.3)	12 (11.8)	.003
腹瀉	14 (10.1)	6	8	.20
噁心	14 (10.1)	4	10	>.99
頭暈	13 (9.4)	8 (22.2)	5 (4.9)	.007
頭痛	9 (6.5)	3	6	.70
嘔吐	5 (3.6)	3	2	.13
腹痛	3 (2.2)	3 (8.3)	0 (0)	.02

住加護病房的病人比較有

1. 厭食
 2. 呼吸困難
 3. 咽痛
 4. 頭暈
 5. 腹痛
- 等症狀

表格一 病人基本資料

Table 1. Baseline Characteristics of Patients Infected With 2019-nCoV

	No. (%)			P Value ^a
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
Age, median (IQR), y	56 (42-68)	66 (57-78)	51 (37-62)	<.001
Sex				
Female	63 (45.7)	14 (38.9)	51 (37-62)	.34
Male	75 (54.3)	22 (61.1)	53 (52.0)	
Onset of symptom to, median (IQR), d				
Hospital admission	7.0 (4.0-8.0)	8.0 (4.5-10.0)	6.0 (3.0-7.0)	.009
Dyspnea	5.0 (1.0-10.0)	6.5 (3.0-10.8)	2.5 (0.0-7.3)	.02
ARDS	8.0 (6.0-12.0)	8.0 (6.0-12.0)	8.0 (6.3-11.3)	.97
Heart rate, median (IQR), bpm	88 (78-97)	89 (81-101)	86 (77-96)	.14
Respiratory rate, median (IQR)	20 (19-21)	20 (16-25)	20 (19-21)	.57
Mean arterial pressure, median (IQR), mm Hg	90 (84-97)	91 (78-96)	90 (85-98)	.33

中位數(天) (四分位差(天))	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
症狀出現到 住院時間	7.0 (4.0-8.0)	8.0 (4.2-10.0)	6.0 (3.0-7.0)	.009
症狀出現到 呼吸困難時間	5.0 (1.0-10.0)	6.5 (3.0-10.8)	2.5 (0.0-7.3)	.02
症狀出現到 急性呼吸窘迫時間	8.0 (6.0-12.0)	8.0 (6.0-12.0)	8.0 (6.3-11.3)	.97
生命徵象 中位數 (四分位差)				
心跳	88 (78-97)	89 (81-101)	86 (77-96)	.14
呼吸速率	20 (19-21)	20 (16-25)	20 (19-21)	.57
動脈平均壓力	90 (84-97)	91 (78-96)	90 (85-98)	.33

加護病房與非加護病房病人
生命徵象無明顯差異

Table 2. Laboratory Findings of Patients Infected With 2019-nCoV on Admission to Hospital

	Normal Range	Median (IQR)			P Value ^a
		Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
White blood cell count, ×10 ⁹ /L	3.5-9.5	4.5 (3.3-6.2)	6.6 (3.6-9.8)	4.3 (3.3-5.4)	.003
Neutrophil count, ×10 ⁹ /L	1.8-6.3	3.0 (2.0-4.9)	4.6 (2.6-7.9)	2.7 (1.9-3.9)	<.001
Lymphocyte count, ×10 ⁹ /L	1.1-3.2	0.8 (0.6-1.1)	0.8 (0.5-0.9)	0.9 (0.6-1.2)	.03
Monocyte count, ×10 ⁹ /L	0.1-0.6	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	.96
Platelet count, ×10 ⁹ /L	125-350	163 (123-191)	142 (119-202)	165 (125-188)	.78
Prothrombin time, s	9.4-12.5	13.0 (12.3-13.7)	13.2 (12.3-14.5)	12.9 (12.3-13.4)	.37
Activated partial thromboplastin time, s	25.1-36.5	31.4 (29.4-33.5)	30.4 (28.0-33.5)	31.7 (29.6-33.5)	.09
D-dimer, mg/L	0-500	203 (121-403)	414 (191-1324)	166 (101-285)	<.001
Creatine kinase, U/L	<171	92 (56-130)	102 (62-252)	87 (54-121)	.08
Creatine kinase-MB, U/L	<25	14 (10-18)	18 (12-35)	13 (10-14)	<.001
Lactate dehydrogenase, U/L	125-243	261 (182-403)	435 (302-596)	212 (171-291)	<.001
Alanine aminotransferase, U/L	9-50	24 (16-40)	35 (19-57)	23 (15-36)	.007
Aspartate aminotransferase, U/L	15-40	31 (24-51)	52 (30-70)	29 (21-38)	<.001
Total bilirubin, mmol/L	5-21	9.8 (8.4-14.1)	11.5 (9.6-18.6)	9.3 (8.2-12.8)	.02
Blood urea nitrogen, mmol/L	2.8-7.6	4.4 (3.4-5.8)	5.9 (4.3-9.6)	4.0 (3.1-5.1)	<.001
Creatinine, μmol/L	64-104	72 (60-87)	80 (66-106)	71 (58-84)	.04
Hypersensitive troponin I, pg/mL	<26.2	6.4 (2.8-18.5)	11.0 (5.6-26.4)	5.1 (2.1-9.8)	.004
Procalcitonin, ng/mL					
≥0.05, No. (%)	<0.05	49 (35.5)	27 (75.0)	22 (21.6)	<.001
Bilateral distribution of patchy shadows or ground glass opacity, No. (%)	NA	138 (100)	36 (100)	102 (100)	>.99

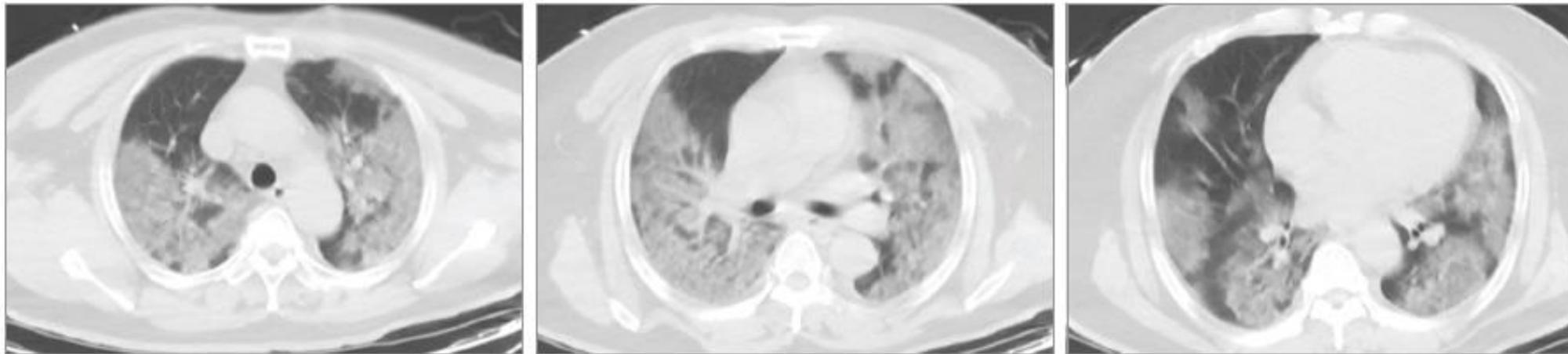
表格二 實驗室檢查

血液檢查	加護病房病人	非加護病房病人
升高		
WBC	6.6 (3.6-9.8)	4.3 (3.3-5.4)
Neutrophil	4.6 (2.6-7.9)	2.7 (1.9-3.9)
BUN	5.9 (4.3-9.6)	4.0 (3.1-5.1)
Creatinine	80 (66-106)	71 (58-84)
AST	52 (30-70)	29 (21-38)
LDH	435 (302-596)	212 (171-291)
CKMB	18 (12-35)	13 (10-14)
D-Dimer	414 (191-1324)	161 (101-285)
Hs-cTnl	11.0 (5.6-26.4)	5.1 (2.1-9.8)
PCT ≥ 0.05 %	75.0%	21.6%
降低		
Lymphocyte	0.8 (0.5-0.9)	0.9 (0.6-1.2)

Figure 1. Chest Computed Tomographic Images of a 52-Year-Old Patient Infected With 2019 Novel Coronavirus (2019-nCoV)

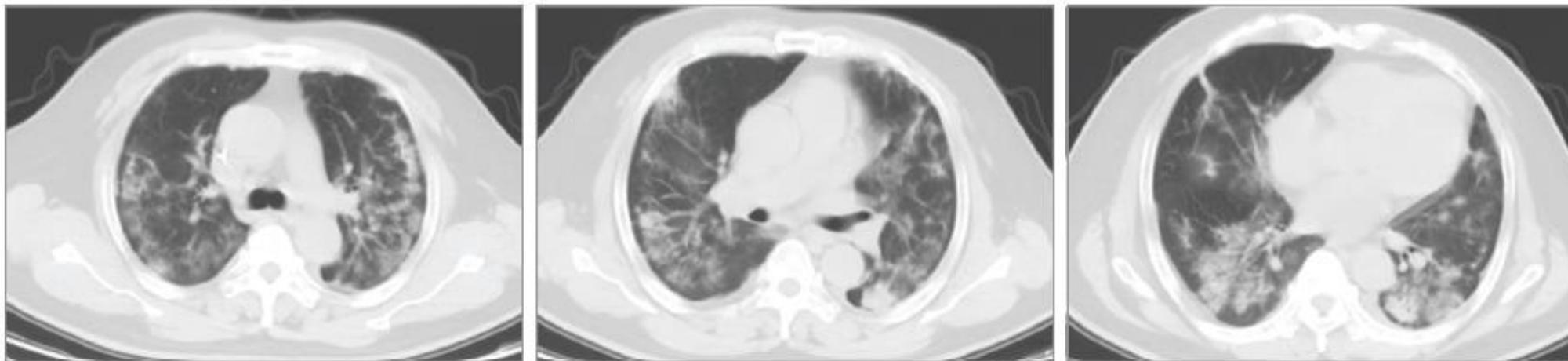
A Computed tomography images on day 5 after symptom onset

症狀產生後第5天的肺部電腦斷層掃描，兩側肺部毛玻璃狀陰影



B Computed tomography images after treatment on day 19 after symptom onset

症狀產生後治療第19天的肺部電腦斷層掃描
加護病房治療，電腦斷層顯示的兩側毛玻璃狀陰影改善



A, Chest computed tomographic images obtained on January 7, 2020, show ground glass opacity in both lungs on day 5 after symptom onset. B, Images taken on January 21, 2020, show the absorption of bilateral ground glass

opacity after the treatment of extracorporeal membrane oxygenation from January 7 to 12 in the intensive care unit.

表格三 入住加護病房當天疾病嚴重度分數及血液氣體分析

Table 3. Severity of Illness Scores and Blood Gas Analysis of Patients Infected With 2019-nCoV in the ICU

	Normal Range	Median (IQR)
No. of patients		36
Onset of symptom to ICU admission, d	NA	10 (6-12)
Time from hospital admission to ICU admission, d	NA	1 (0-3)
Glasgow Coma Scale score	NA	15 (9-15)
APACHE II	NA	17 (10-22)
SOFA	NA	5 (3-6)
PH	7.35-7.45	7.43 (7.39-7.47)
Lactate, mmol/L	0.5-1.6	1.3 (0.7-2.0)
PaO ₂ , mm Hg	83-108	68 (56-89)
PaO ₂ :FIO ₂ , mm Hg	400-500	136 (103-234)
Paco ₂ , mm Hg	35-48	34 (30-38)

Abbreviations: APACHE II, Acute Physiology and Chronic Health Evaluation II; FIO₂, fraction of inspired oxygen; ICU, intensive care unit; IQR, interquartile range; NA, not available; 2019-nCoV, 2019 novel coronavirus; Paco₂, partial pressure of carbon dioxide; PaO₂, partial pressure of oxygen; SOFA, Sequential Organ Failure Assessment.

表格三 138位病人併發症與治療

Table 4. Complications and Treatments of Patients Infected With 2019-nCoV

	No. (%)			P Value ^a
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
Complications				
Shock	12 (8.7)	11 (30.6)	1 (1.0)	<.001
Acute cardiac injury	10 (7.2)	8 (22.2)	2 (2.0)	<.001
Arrhythmia	23 (16.7)	16 (44.4)	7 (6.9)	<.001
ARDS	27 (19.6)	22 (61.1)	5 (4.9)	<.001
AKI	5 (3.6)	3 (8.3)	2 (2.0)	.11
Treatment				
Antiviral therapy	124 (89.9)	34 (94.4)	90 (88.2)	.36
Glucocorticoid therapy	62 (44.9)	26 (72.2)	36 (35.3)	<.001
CKRT	2 (1.45)	2 (5.56)	0	>.99
Oxygen inhalation	106 (76.81)	4 (11.11)	102 (100)	<.001
NIV	15 (10.9)	15 (41.7)	0	<.001
IMV	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

併發症	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
休克	12 (8.7)	11 (30.6)	1 (1.0)	<.001
急性心肌損傷	10 (7.2)	8 (22.2)	2 (2.0)	<.001
心律不整	23 (16.7)	16 (44.4)	7 (6.9)	<.001
急性呼吸窘迫症	27 (19.6)	22 (61.1)	5 (4.9)	<.001
急性腎臟損傷	5	3	2	.11
治療	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
抗病毒藥物	124	34	90	.36
類固醇治療	62 (44.9)	26 (72.2)	36 (35.3)	<.001
洗腎	2	2	0	>.99
氧氣治療	106 (76.81)	4 (11.11)	102 (100)	<.001
非侵入性呼吸輔助	15 (10.9)	15 (41.7)	0	<.001
侵入性機器呼吸輔助	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

一直到2020/02/03
6位病人死亡 (6/138=4.35%)
47位病人出院
85位病人仍然住院中

**36人(36/138=26%)進入
加護病房治療**

表格三 138位病人併發症與治療

併發症	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
休克	12 (8.7)	11 (30.6)	1 (1.0)	<.001
急性心肌損傷	10 (7.2)	8 (22.2)	2 (2.0)	<.001
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治療	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
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Table 4. Complications and Treatments of Patients Infected With 2019-nCoV

Complications	No. (%)			P Value ^a
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
Shock	12 (8.7)	11 (30.6)	1 (1.0)	<.001
Acute cardiac injury	10 (7.2)	8 (22.2)	2 (2.0)	<.001
Arrhythmia	23 (16.7)	16 (44.4)	7 (6.9)	<.001
ARDS	27 (19.6)	22 (61.1)	5 (4.9)	<.001
AKI	5 (3.6)	3 (8.3)	2 (2.0)	.11
Treatment				
Antiviral therapy	124 (89.9)	34 (94.4)	90 (88.2)	.36
Glucocorticoid therapy	62 (44.9)	26 (72.2)	36 (35.3)	<.001
CKRT	2 (1.45)	2 (5.56)	0	>.99
Oxygen inhalation	106 (76.81)	4 (11.11)	102 (100)	<.001
NIV	15 (10.9)	15 (41.7)	0	<.001
IMV	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

表格三 138位病人併發症與治療

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IMV	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

併發症	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
休克	12 (8.7)	11 (30.6)	1 (1.0)	<.001
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急性腎臟損傷	5	3	2	.11

住進加護病房病人有較高**休克、急性心肌損傷、心律不整、急性呼吸窘迫**的併發症

一直到2020/02/03
6位病人死亡 (6/138=4.35%)
85位病人仍然住院中

47位病人出院 (34.1%出院)
住院-出院時間中位數: 10天

Common complications among the 138 patients included shock (12 [8.7%]), ARDS (27 [19.6%]), arrhythmia (23 [16.7%]), and acute cardiac injury (10 [7.2%]). Patients who received care in the ICU were more likely to have one of these complications than non-ICU patients.

表格三 138位病人併發症與治療

Table 4. Complications and Treatments of Patients Infected With 2019-nCoV

	No. (%)			P Value ^a
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	
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治療	總住院 N=138	加護病房 N=36	非加護病房 N=102	p值
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類固醇治療	62 (44.9)	26 (72.2)	36 (35.3)	<.001
洗腎	2	2	0	>.99
氧氣治療	106 (76.81)	4 (11.11)	102 (100)	<.001
非侵入性呼吸輔助	15 (10.9)	15 (41.7)	0	<.001
侵入性機器呼吸輔助	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

一直到2020/02/03
6位病人死亡 (6/138=4.35%)
47位病人出院
85位病人仍然住院中

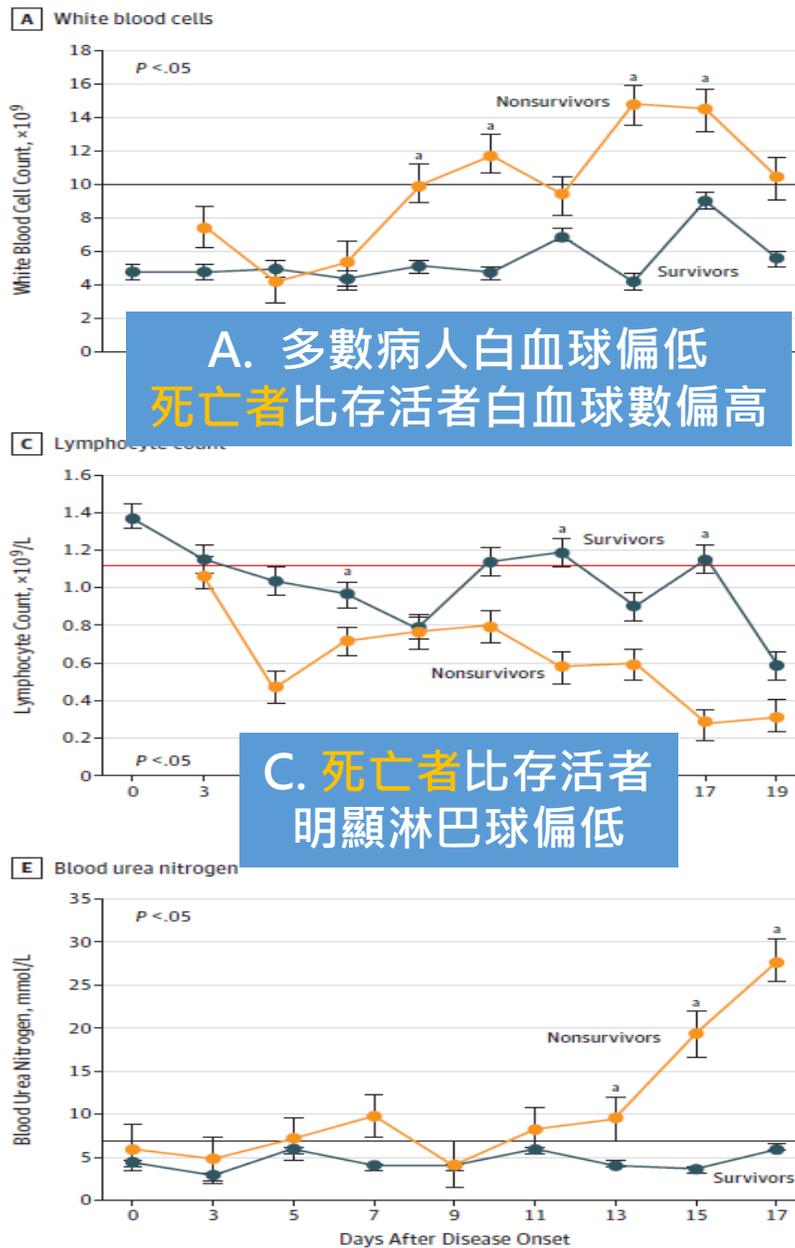
36位加護病房病人 (2020/02/03)
9位已出院返家
10位轉到一般病房
6位死亡
有11位仍然在加護病房中
11位中有6位接受侵入性機器輔助呼吸

Figure 2. Dynamic Profile of Laboratory Parameters in 33 Patients With Novel Coronavirus-Infected Pneumonia (NCIP)

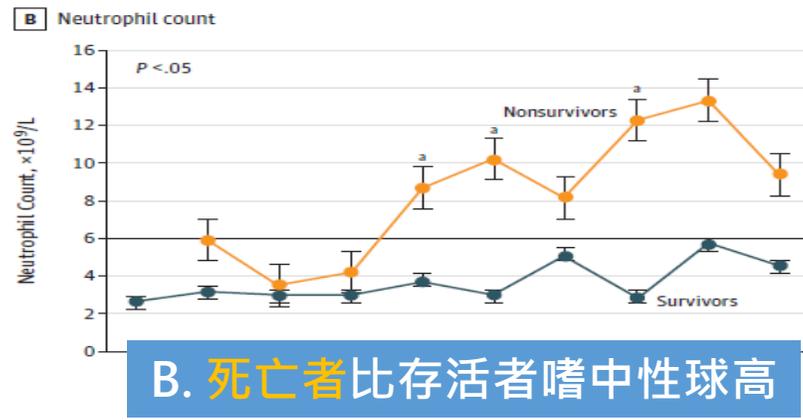
圖二

33位新型冠狀病毒肺炎 臨床表徵

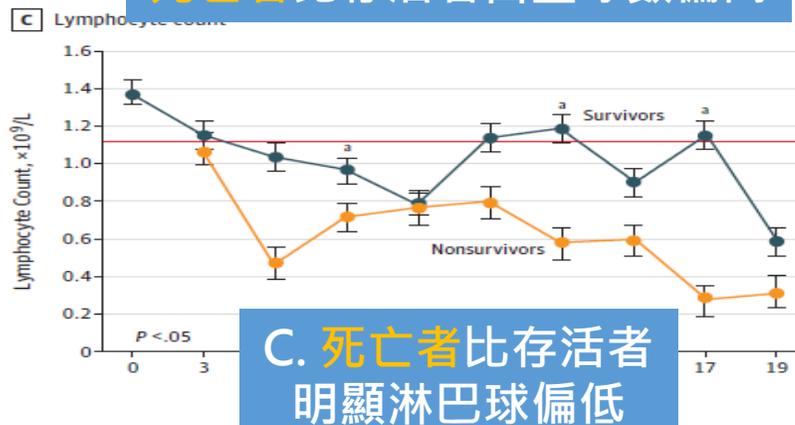
從住院首日到第19天，
每兩天檢查一次



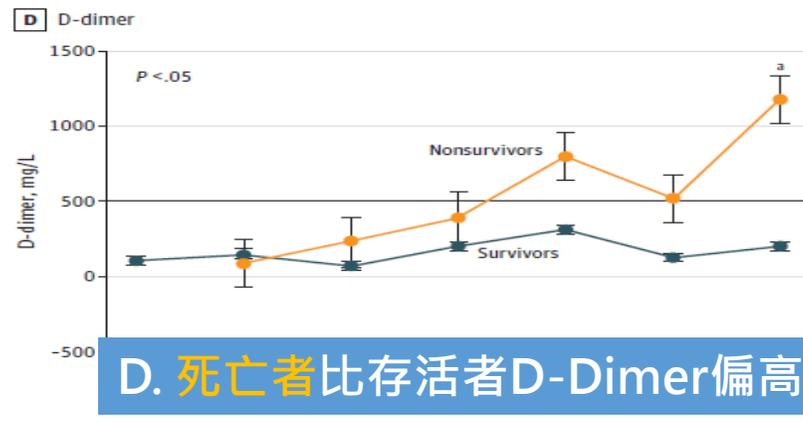
**A. 多數病人白血球偏低
死亡者比存活者白血球數偏高**



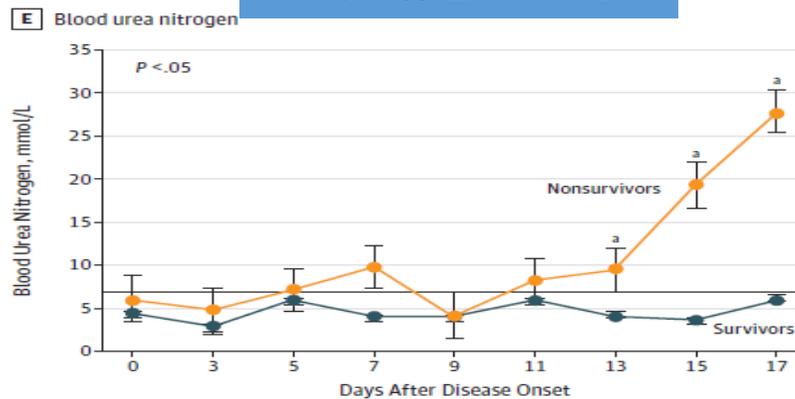
B. 死亡者比存活者嗜中性球高



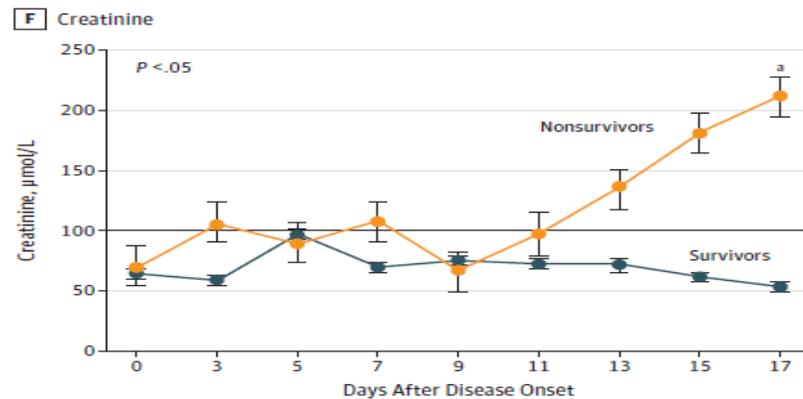
**C. 死亡者比存活者
明顯淋巴球偏低**



D. 死亡者比存活者D-Dimer偏高



E. F. 死亡者死亡前的BUN/Cr也都明顯上升



Timeline charts illustrate the laboratory profile of illness. The solid lines in black show the lymphocyte count. ^a P < .05 for nonsurvivors vs survivors.

	總住院 N=138
年齡中位數 (四分位差)	56 (42-68)
性別(女/男)	63/75
院內感染-醫療人員	40 (29)
醫療人員 – 內科病房	31
醫療人員 – 急診	7
醫療人員 – 加護病房	2
院內感染-住院病人	17 (12.3)
住院病人 – 外科病房	7
住院病人 – 內科病房	5
住院病人 – 腫瘤病房	5

院內傳染

一位有腹部症狀的病人入住外科病房，造成超過10位醫療人員感染，以及4位院內住院病人感染，而且一剛開始都呈現不典型的腹部症狀。

四位病人其中一位先發燒後被診斷有新型冠狀病毒感染，後續其他三位陸續發燒並有腹部症狀，之後也被確診。



討論

- 138位住院病人中，26%需要加護病房照護，34.1%出院，4.3%死亡
- 47位出院病人，住院時間中位數: 10天
- 症狀出現到呼吸困難: 5天、到住院: 7天、到急性呼吸窘迫: 8天
- 疾病初期常見症狀: 發燒、乾咳、肌肉痠痛、倦怠、呼吸困難、厭食
- 仍須注意非典型症狀: 腹瀉、噁心
- 住院最主要併發症: 急性呼吸窘迫、心律不整及休克
- 典型電腦斷層影像學呈現: 雙側片狀及毛玻璃狀陰影
- 大部分加護病房病人: 年紀較長、有較多共病症，因此年長及多重共病可能是預後不良的危險因子。
- 多數病人需要氧氣治療，少數病人需要用侵入性呼吸輔助甚至ECMO

討論

- 本研究證實新型冠狀病毒具有快速的人傳人的特性，有可能是因為釐患新型冠狀病毒肺炎疾病初期具有不典型的症狀，需要特別注意。
- 最近有研究指出新型冠狀病毒在具有腹部症狀的病人糞便中被檢驗出來，但是較難針對具有不典型症狀的病人進行區分及篩檢，還是需要注意密切接觸史。
- 本研究男女性別在加護病房或是非加護病房並無差異(與前研究不同)，有可能是因為前研究大部分男性都是海鮮市場的工作者。
- 本研究可能因為在疾病爆發期，因此嚴重呼吸困難及侵入性氧氣輔助比例使用較高。
- 在加護病房病人較常出現呼吸困難、腹痛及厭食的症狀。
- 症狀可能可以協助醫療人員評估病情預後狀況。

討論

- 本研究發現實驗室異常有: 淋巴球下降、凝血時間延長、LDH上升
- 本研究比較加護病房與非加護病房病人的抽血，發現新型冠狀病毒可能和細胞免疫缺乏、活化凝血系統、心肌、肝臟以及腎臟損傷有關，也和之前MERS, SARS感染觀察到的情形類似。
- 在5位死亡者的抽血檢驗中發現，死亡者在死亡前嗜中性球、D-Dimer、BUN和Cr均持續升高，而淋巴球持續下降。嗜中性球持續增加有可能是因為病毒引起的細胞激素風暴，凝血系統活化有可能是和持續性的發炎反應有關，而急性腎臟受損則直接和病毒、缺氧以及休克有關。
- 直到現在還沒有特別針對新型冠狀病毒的治療方式。
- 本研究的限制: 診斷採用呼吸道採樣，沒有血清學檢查；院內感染是利用時序性進行推測，無法證實；還有病人住院，無法完整評估危險因子。

重點整理

- 年紀大、共病多，容易入住加護病房
- 有厭食、呼吸困難、咽痛、頭暈、腹痛等容易入住加護病房
- 住進加護病房病人有較高休克、急性心肌損傷、心律不整、急性呼吸窘迫的併發症
- 新型冠狀病毒血液檢查呈現淋巴球降低、白血球、嗜中性球、BUN、Cr、AST、LDH、CK-MB、D-Dimer、Hs-CTnl與PCT會上升。
- 感染後，若BUN、Cr急速上升、白血球及嗜中性球及D-Dimer持續上升及淋巴球持續下降，都表示預後較差。