HOSPITAL PUERTO MONTT

Comprometidos con tu salud

COVID -19

Dra. Loreto Rojas Wettig
Unidad de Infectología
Hospital de Puerto Montt

Coronavirus (CoVs)

Coronavirus humano:
Virus RNA.

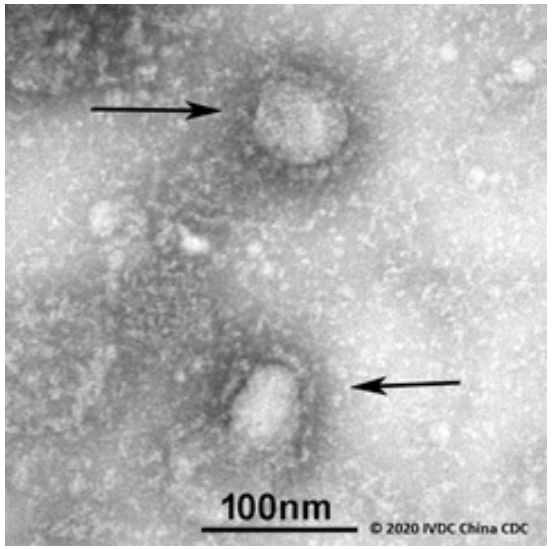
Subtipos:

- SARS-CoV-MERS-CoV → gran afectación pulmonar

- Otros 4 tipos : HCoV**OC43,** HCoV**229E**, HCoVNL63, HCoVHKU1 → infeción respiratoria alta

Partial list of important pathogenic human coronaviruses [87].

Virus	Genus	Symptoms
HCoV-229E	*alpha*	mild respiratory tract infections
HCoV-NL63	*alpha*	mild respiratory tract infections
HCoV-OC43	*beta*	mild respiratory tract infections
HCoV-HKU1	*beta*	pneumonia
SARS-CoV	*beta*	severe acute respiratory syndrome, 11% mortality rate
MERS-CoV	*beta*	severe acute respiratory syndrome, 34% mortality rate
SARS-CoV-2	*beta*	severe acute respiratory syndrome, 2.6% mortality rate



Yang. Journal of autoimmunity. The deadly coronaviruses: The 2003 SARS pandemic and the 2020 novel coronavirus epidemic in China. https://doi.org/10.1016/j.jaut.2020.102434

Coronavirus (CoVs)

- Zoonosis: origen en murciélagos

- SARS: 2002-2003: 8422 29 paises transmitido desde la Cibeta. Mortalidad 10%

- MERS: 2012: Medio Oriente. transmitido desde el dromedario. Mortalidad 35%

Yang. Journal of autoimmunity. The deadly coronaviruses: The 2003 SARS pandemic and the 2020 novel coronavirus epidemic in China. https://doi.org/10.1016/j.jaut.2020.102434

Virus: SARS- CoV-2 → enfermedad: COVID- 19

- Se une al Rc convertidor de angiotensina 2 (ACE2) que se encuentra en células alveolares y epitelio intestinal al igual que SARS-CoV-1
- Virus que se encuentra en permanente mutación → dificultad para definir transmisibilidad, diferente evolución, mortalidad
- Transmision a traves de gotitas y contacto

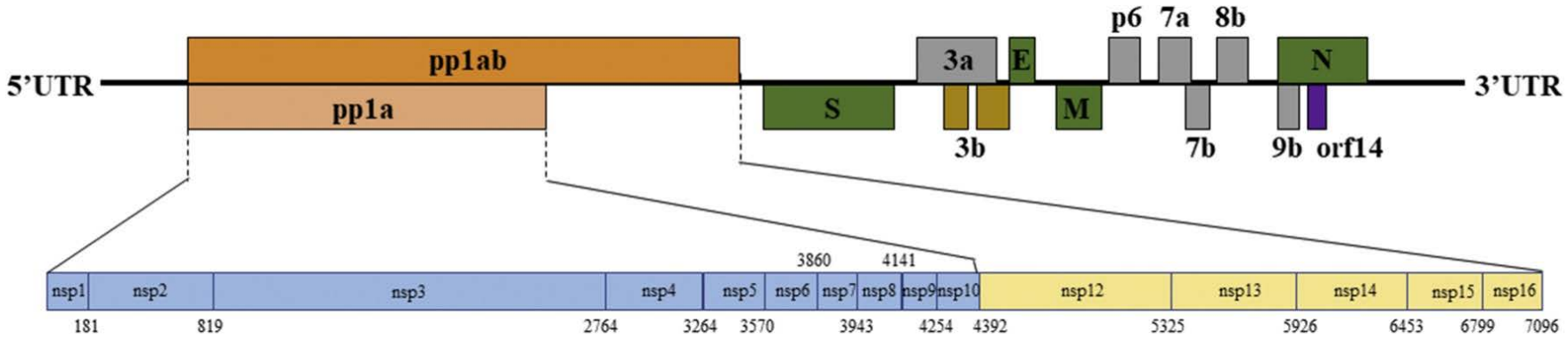
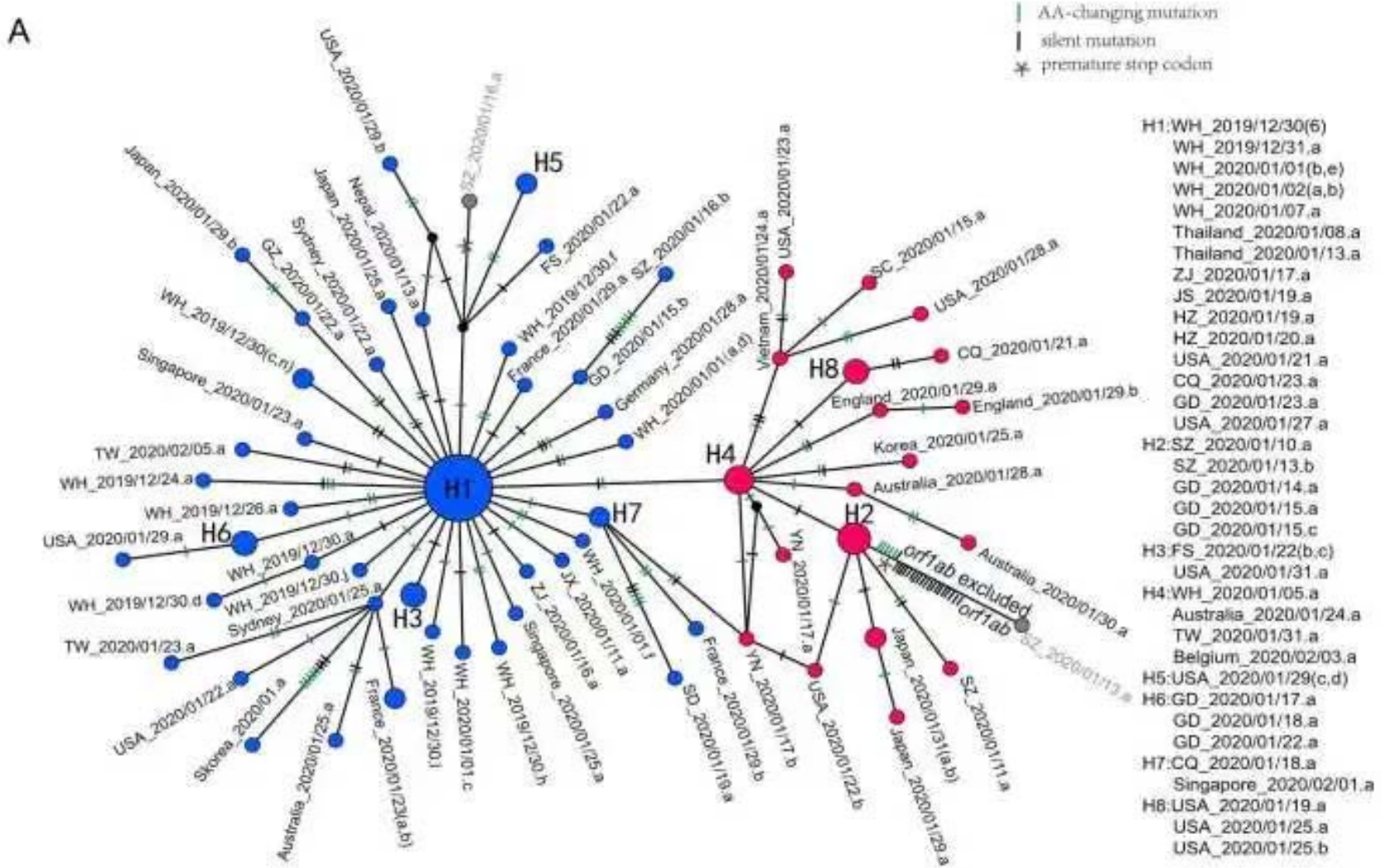


Fig. 7. Schematic diagram of the SARS-CoV-2 genome [95]. The genomic structure of SARS-CoV-2 is 5′-UTR-orf1a-orf1ab-S (Spike)–E (Envelope)-M (Membrane)-N (Nucleocapsid)-3′UTRpoly (A) tail. Accessory genes are interspersed within the structural genes at the 3′ end of genome. The pp1a protein encoded by the orf1a gene and the pp1ab protein encoded by the orf1ab gene contains 10 nsps (nsp1-nsp10). The pp1ab protein also includes nsp12-nsp16.

Yang. Journal of autoimmunity. The deadly coronaviruses: The 2003 SARS pandemic and the 2020 novel coronavirus epidemic in China. https://doi.org/10.1016/j.jaut.2020.102434

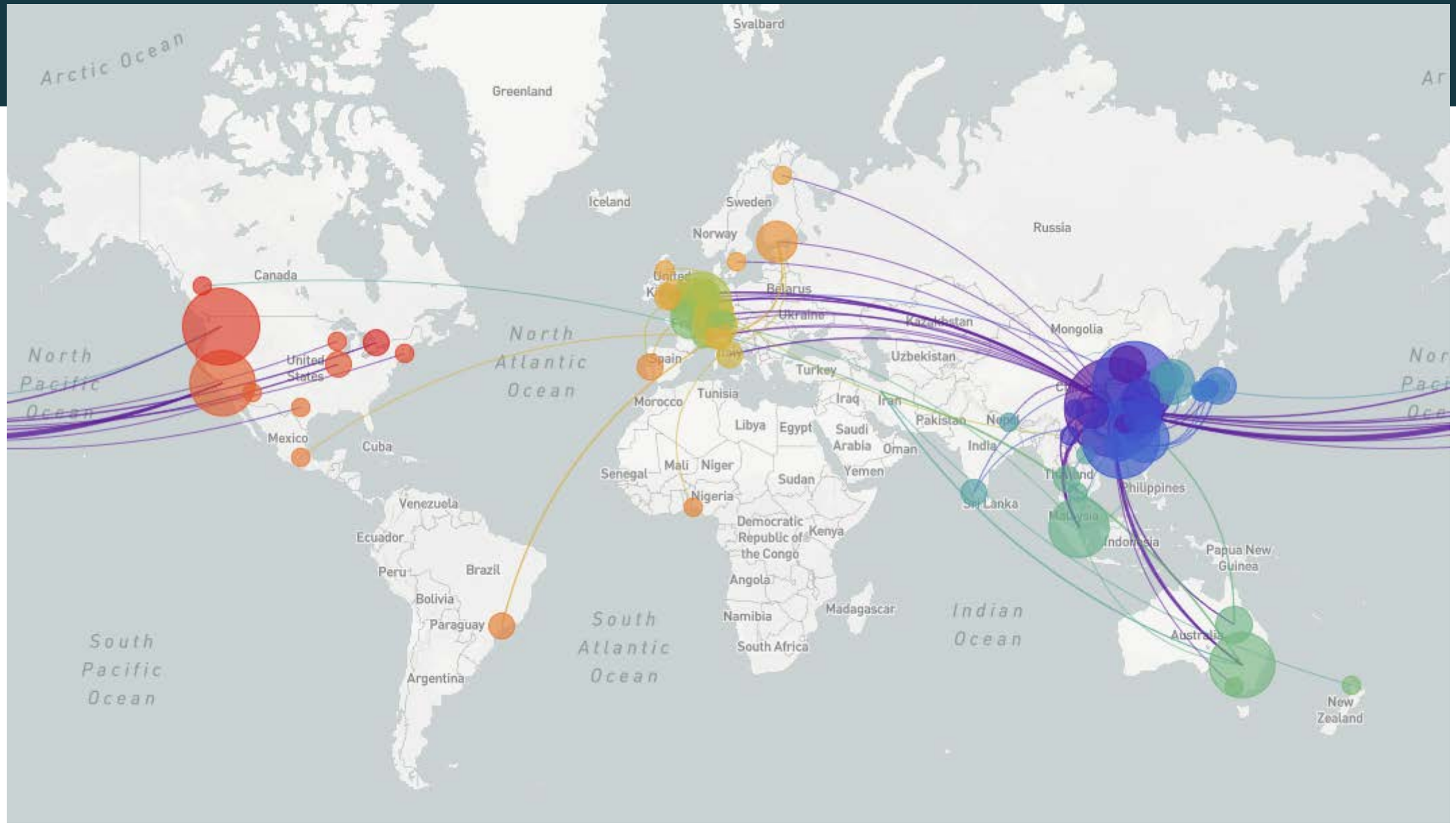
There's actually no such thing as COVID-19… there are innumerable different viruses evolving over time.



L haplotype
- *More prevalent overall.*
- *More common early in outbreak.*
- *Responsible for cases in Wuhan..*
- *More virulent*

S haplotype
- *Less prevalent overall.*
- *Emerged later in outbreak.*
- *More common outside Wuhan.*
- *Less virulent.*

Tang X et. al.


Arctic Ocean
Svalbard
Greenland
Iceland
Sweden
Norway
Russia
Canada
Belarus
Ukraine
Kazakhstan
Mongolia
North Pacific Ocean
North Atlantic Ocean
United States
Spain
Uzbekistan
Turkey
Tunisia
Morocco
Iraq
Iran
Pakistan
Nepal
India
Libya
Egypt
Saudi Arabia
Oman
Mexico
Cuba
Senegal
Mali
Niger
Yemen
Sudan
Nigeria
Philippines
Sri Lanka
Venezuela
Ecuador
Democratic Republic of the Congo
Kenya
Peru
Brazil
Indonesia
Papua New Guinea
Angola
Bolivia
Namibia
Madagascar
Paraguay
South Africa
Australia
South Pacific Ocean
South Atlantic Ocean
Indian Ocean
Argentina
New Zealand

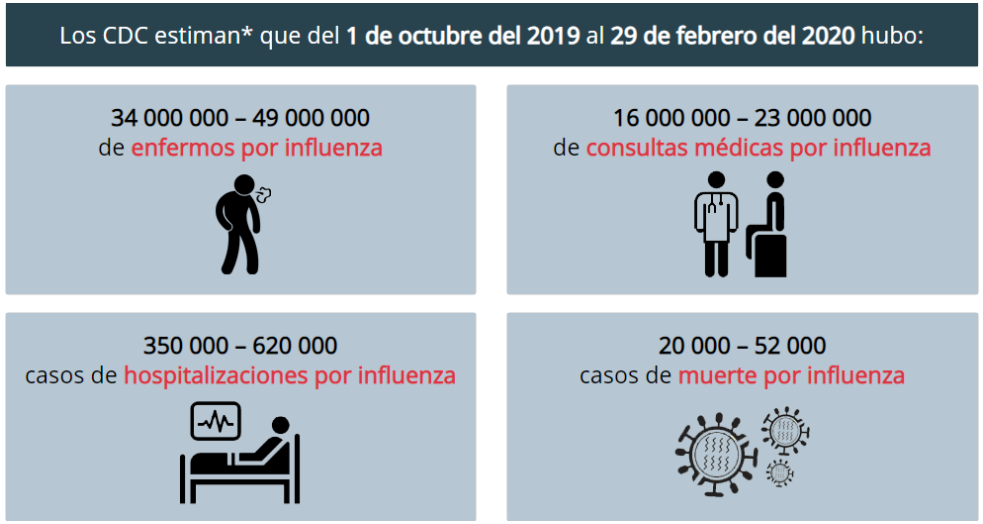
COVID-19

113.672 TOTAL

80.754	China
9172	Italia
7478	Corea del Sur
7161	Iran
1209	Francia
1176	Alemania
1073	España
605	EEUU
511	Japón

4012 fallecidos

3024	China
463	Italia
53	Corea del Sur
237	Iran
19	Francia
2	Alemania
28	España
17	EEUU
17	Japón



GISAID Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE

CDC

COVID-19 Chile MINSAL

Casos confirmados en Chile COVID-19

Casos COVID-19 en Chile				
Región	**Casos confirmados**	**Sexo**	**Edad**	**Centro de salud**
Arica y Pariracota	0	—	—	—
Tarapacá	0	—	—	—
Antofagasta	0	—	—	—
Atacama	0	—	—	—
Coquimbo	0	—	—	—
Valparaíso	0	—	—	—
Metropolitana	7	Femenino	56	Clínica Alemana
		Femenino	40	Clínica Santa María
		Masculino	58	Clínica Alemana
		Masculino	17	Clínica Alemana
		Femenino	83	Clínica Las Condes
		Masculino	14	Clínica Alemana
		Masculino	42	Clínica Los Andes
O'Higgins	0	—	—	—
Maule	4	Masculino	33	Hospital de Talca
		Femenino	33	
		Masculino	39	
		Femenino	2	
Ñuble	0	—	—	—
Biobío	1	Masculino	38	Hospital G. Grant Benavente
Araucanía	0	—	—	—
Los Ríos	0	—	—	—
Los Lagos	1	Femenino	20	Hospital de Puerto Montt
Aysén	0	—	—	—
Magallanes	0	—	—	—
Total	**13**	—	—	—

Patogénesis:

SDRA

Daño alveolar difuso. Afectación citopática de los neumocitos. Daño directo viral

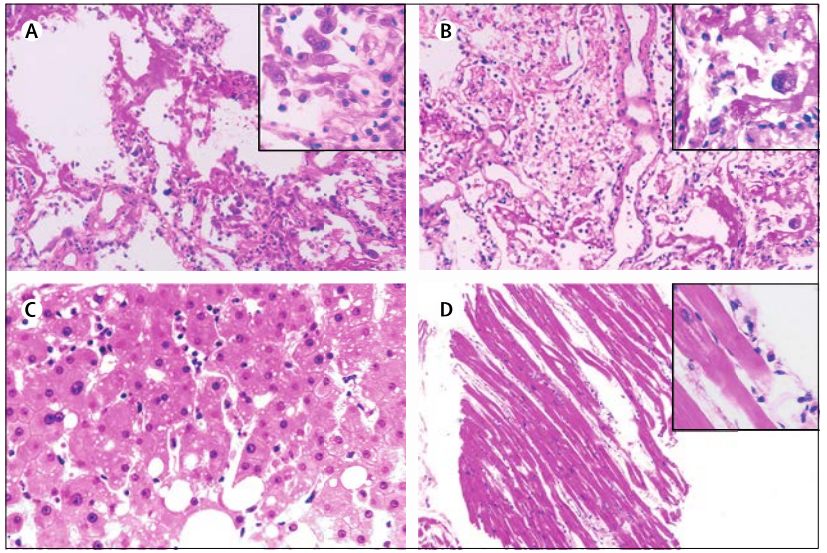
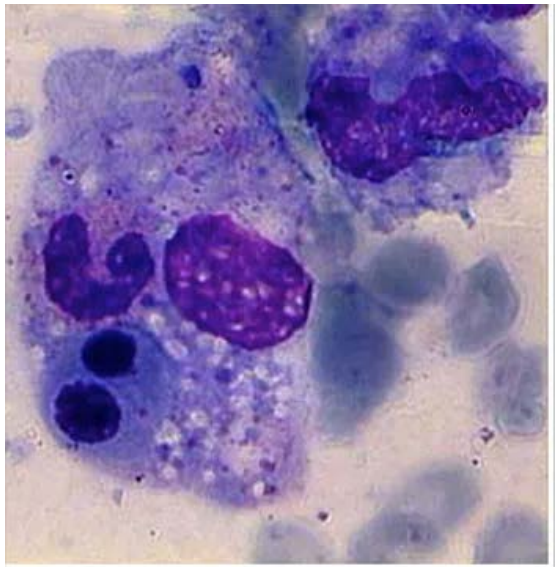


Figure 2: **Pathological manifestations of right (A) and left (B) lung tissue, liver tissue (C), and heart tissue (D) in a patient with severe pneumonia caused by SARS-CoV-2**

SARS-CoV-2=severe acute respiratory syndrome coronavirus 2.



Hemophagocytosis:
Macrophage has ingested other cells

Liberación de citoquinas proinflamatorias. **"tormenta citoquinas"** Sd hemofagocítico, activación macrofágica → IL1-IL6-IL8

Elevación de PCR y ferritina → severidad

Pathological findings of COVID-19 associated with acute respiratory distress syndrome Lancet Respir Med 2020

Evolución bifásica

Fase de **replicación viral:** varios días: respuesta **inmune innata**. No logra controlar el virus. Sintomas 2 al daño directo viral y a respuesta inmune

Fase de **respuesta inmune adaptativa**: controlar carga viral, mayor efecto inflamatorio de citoquinas y daño tisular.

Latencia para presentación de gravedad

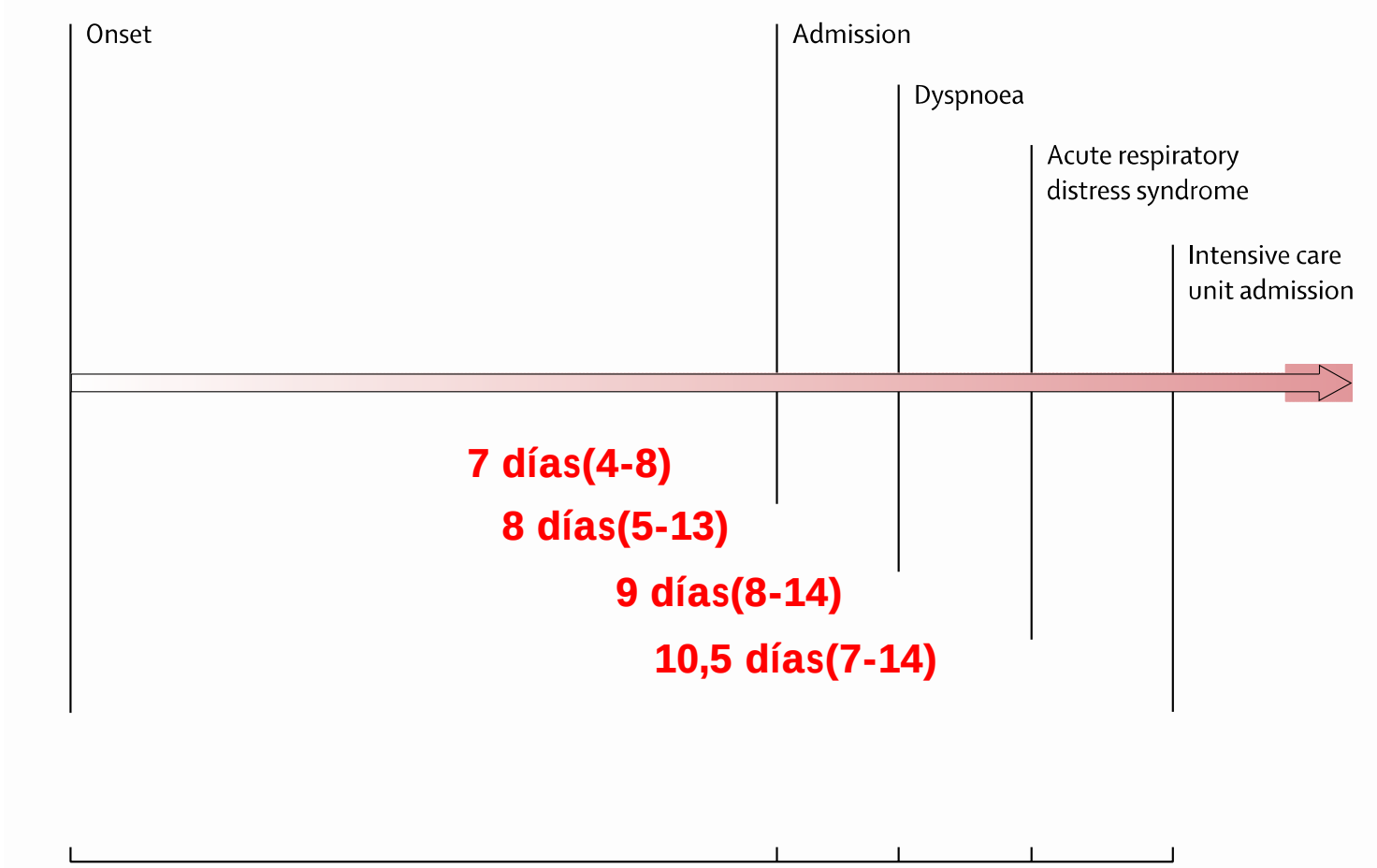
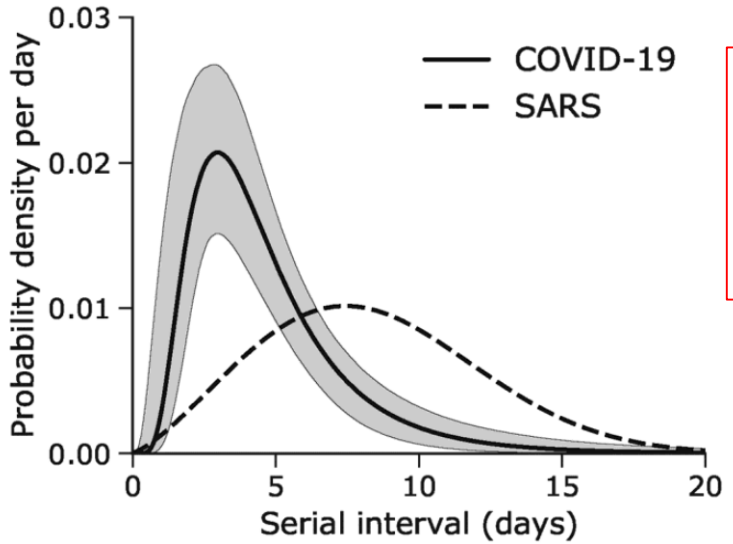


Figure 2: **Timeline of 2019-nCoV cases after onset of illness**

Huang, Lancet January 24 2020; 395:497-506

Transmisibilidad

R0: 2,5 a 2,9 personas
Periodo de incubación media: 5 días



Serial interval: periodo de tiempo desde que aparecen los sintomas entre la primera persona y segunda persona infectada por él.

Figure 1. Serial interval of novel coronavirus (COVID-19) infections.

The solid line shows the estimated serial interval distribution of COVID-19 infections using the best-fit lognormal distribution with right truncation. A distribution based on a published estimate of the serial interval for severe acute respiratory syndrome [3] is overlaid as a dashed line for comparison.

Nishiura, Serial interval of novel coronavirus (COVID-19) infections. Int J Infect Dis. 2020 Mar 4. pii: S1201-9712(20)30119-3

Detección viral

- Mayor carga viral en muestras nasofaringeas al inicio de los síntomas

- La excrecion viral se puede prolongar hasta 24 dias posterior al inicio de los síntomas, lo que no implica necesariamente transmisión.
- A pesar de detectar virus mediante tecnicas molecualres, no se ha podido cultivar posterior a 8 días de iniciado la sintomatología

- Se ha aislado en deposición

JAMA. Published online March 3, 2020. doi:10.1001/jama.2020.3204

Datos clínicos

- Periodo de incubación: 5,2 días

- Tiempo desde que se inician los síntomas hasta la muerte: 14 días (6 a 41 días)
>70 años vs < 70 años (12 vs 20 días)
- Mortalidad 2,84

Sintomas frecuentes: fiebre, tos, astenia

Menos frecuente:

- Tos con espectoración, cefalea, hemoptisis, diarrea, disnea, linfopenia
- Neumonia, SDRA, vidrio esmerilado, falla cardiaca

Signos radiológicos: Vidrio esmerilado regiones subpleurales, bilaterales

Rothan, Journal of Autoimmunity. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak Feb 2020

Clínica

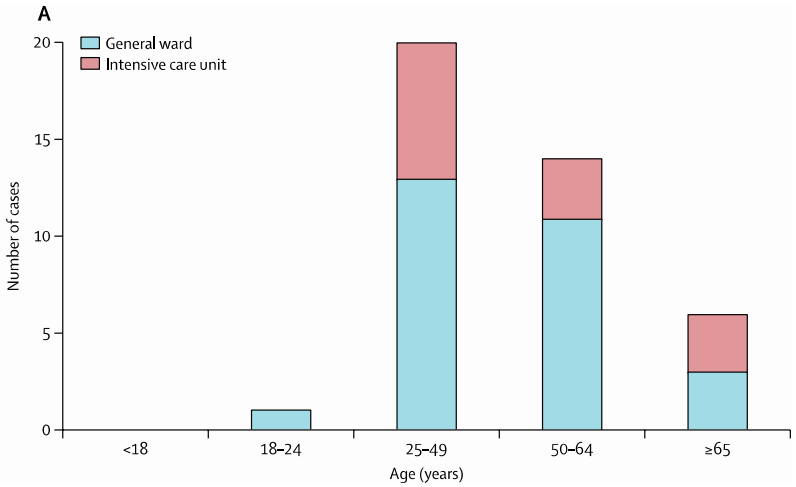
Rothan, Journal of Autoimmunity. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak Feb 2020

Datos clínicos: edad como factor de riesgo

Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China

Chaolin Huang, Yeming Wang*, Xingwang Li*, Lili Ren*, Jianping Zhao*, Yi Hu*, Li Zhang, Guohui Fan, Jiuyang Xu, Xiaoying Gu, Zhenshun Cheng, Ting Yu, Jiaan Xia, Yuan Wei, Wenjuan Wu, Xuelei Xie, Wen Yin, Hui Li, Min Liu, Yan Xiao, Hong Gao, Li Guo, Jungang Xie, Guangfa Wang, Rongmeng Jiang, Zhancheng Gao, Qi Jin, Jianwei Wang†, Bin Cao†*

- Primeros 41 pacientes hospitalizados desde el 16 de dic 2019 al 2 de enero 2020.



Huang, Lancet January 24 2020; 395:497-506

Comorbilidades y edad

- Comorbilidades: DM2, HTA, ICC
- Media de edad: 49 años

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
Characteristics				
Age, years	49·0 (41·0–58·0)	49·0 (41·0–61·0)	49·0 (41·0–57·5)	0·60
Sex	..	..	..	0·24
Men	30 (73%)	11 (85%)	19 (68%)	..
Women	11 (27%)	2 (15%)	9 (32%)	..
Huanan seafood market exposure	27 (66%)	9 (69%)	18 (64%)	0·75
Current smoking	3 (7%)	0	3 (11%)	0·31
Any comorbidity	13 (32%)	5 (38%)	8 (29%)	0·53
Diabetes	8 (20%)	1 (8%)	7 (25%)	0·16
Hypertension	6 (15%)	2 (15%)	4 (14%)	0·93
Cardiovascular disease	6 (15%)	3 (23%)	3 (11%)	0·32
Chronic obstructive pulmonary disease	1 (2%)	1 (8%)	0	0·14
Malignancy	1 (2%)	0	1 (4%)	0·49
Chronic liver disease	1 (2%)	0	1 (4%)	0·68

Huang, Lancet January 24 2020; 395:497-506

Clínica

Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

Nanshan Chen, Min Zhou*, Xuan Dong*, Jieming Qu*, Fengyun Gong, Yang Han, Yang Qiu, Jingli Wang, Ying Liu, Yuan Wei, Jia'an Xia, Ting Yu, Xinxin Zhang, Li Zhang*

Chronic medical illness	50 (51%)
Cardiovascular and cerebrovascular diseases	40 (40%)
Digestive system disease	11 (11%)
Endocrine system disease†	13 (13%)
Malignant tumour	1 (1%)
Nervous system disease	1 (1%)
Respiratory system disease	1 (1%)
Admission to intensive care unit	23 (23%)
Clinical outcome	
Remained in hospital	57 (58%)
Discharged	31 (31%)
Died	11 (11%)

	Patients (n=99)
Age, years	
Mean (SD)	55·5 (13·1)
Range	21–82
≤39	10 (10%)
40–49	22 (22%)
50–59	30 (30%)
60–69	22 (22%)
≥70	15 (15%)
Sex	
Female	32 (32%)
Male	67 (68%)

51% comorbilidades
23% UPC
11% mortalidad

Chen, Lancet, 2020: 395:507-13

Principales síntomas: Fiebre, tos

Signs and symptoms				
Fever	40 (98%)	13 (100%)	27 (96%)	0·68
Highest temperature, °C	..	..	..	0·037
<37·3	1 (2%)	0	1 (4%)	..
37·3–38·0	8 (20%)	3 (23%)	5 (18%)	..
38·1–39·0	18 (44%)	7 (54%)	11 (39%)	..
>39·0	14 (34%)	3 (23%)	11 (39%)	..
Cough	31 (76%)	11 (85%)	20 (71%)	0·35
Myalgia or fatigue	18 (44%)	7 (54%)	11 (39%)	0·38
Sputum production	11/39 (28%)	5 (38%)	6/26 (23%)	0·32
Headache	3/38 (8%)	0	3/25 (12%)	0·10
Haemoptysis	2/39 (5%)	1 (8%)	1/26 (4%)	0·46
Diarrhoea	1/38 (3%)	0	1/25 (4%)	0·66
Dyspnoea	22/40 (55%)	12 (92%)	10/27 (37%)	0·0010
Days from illness onset to dyspnoea	8·0 (5·0–13·0)	8·0 (6·0–17·0)	6·5 (2·0–10·0)	0·22
Days from first admission to transfer	5·0 (1·0–8·0)	8·0 (5·0–14·0)	1·0 (1·0–6·5)	0·0023
Systolic pressure, mm Hg	125·0 (119·0–135·0)	145·0 (123·0–167·0)	122·0 (118·5–129·5)	0·018
Respiratory rate >24 breaths per min	12 (29%)	8 (62%)	4 (14%)	0·0023

- Fiebre 98%
- Tos seca 76%
- Mialgias/astenia 44%

- Disnea 55%

- Espectoración: 28%
- Cefalea: 8%
- Hemoptisis 5%
- Diarrea 3%

Huang, Lancet January 24 2020; 395:497-506

Síntomas

	Patients (n=99)
Signs and symptoms at admission	
Fever	82 (83%)
Cough	81 (82%)
Shortness of breath	31 (31%)
Muscle ache	11 (11%)
Confusion	9 (9%)
Headache	8 (8%)
Sore throat	5 (5%)
Rhinorrhoea	4 (4%)
Chest pain	2 (2%)
Diarrhoea	2 (2%)
Nausea and vomiting	1 (1%)
More than one sign or symptom	89 (90%)
Fever, cough, and shortness of breath	15 (15%)

Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

Nanshan Chen, Min Zhou*, Xuan Dong*, Jieming Qu*, Fengyun Gong, Yang Han, Yang Qiu, Jingli Wang, Ying Liu, Yuan Wei, Jia'an Xia, Ting Yu, Xinxin Zhang, Li Zhang*

- Fiebre 83%
- Tos 82%
- Disnea 31%

Chen, Lancet, 2020: 395:507-13

UCI: leucopenia-elevación PCR-ferritina

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
White blood cell count, ×10⁹ per L	6·2 (4·1–10·5)	11·3 (5·8–12·1)	5·7 (3·1–7·6)	0·011
<4	10/40 (25%)	1/13 (8%)	9/27 (33%)	0·041
4–10	18/40 (45%)	5/13 (38%)	13/27 (48%)	..
>10	12/40 (30%)	7/13 (54%)	5/27 (19%)	..
Neutrophil count, ×10⁹ per L	5·0 (3·3–8·9)	10·6 (5·0–11·8)	4·4 (2·0–6·1)	0·00069
Lymphocyte count, ×10⁹ per L	0·8 (0·6–1·1)	0·4 (0·2–0·8)	1·0 (0·7–1·1)	0·0041
<1·0	26/41 (63%)	11/13 (85%)	15/28 (54%)	0·045
≥1·0	15/41 (3			
Prothrombin time, s		11·1 (10·1–12·4)	12·2 (11·2–13·4)	10·7 (9·8–12·1)	0·012
Activated partial thromboplastin time, s		27·0 (24·2–34·1)	26·2 (22·5–33·9)	27·7 (24·8–34·1)	0·57
D-dimer, mg/L		0·5 (0·3–1·3)	2·4 (0·6–14·4)	0·5 (0·3–0·8)	0·0042
Albumin, g/L		31·4 (28·9–36·0)	27·9 (26·3–30·9)	34·7 (30·2–36·5)	0·00066
Alanine aminotransferase, U/L		32·0 (21·0–50·0)	49·0 (29·0–115·0)	27·0 (19·5–40·0)	0·038
Lactate dehydrogenase, U/L	286·0 (242·0–408·0)	400·0 (323·0–578·0)	281·0 (233·0–357·0)	0·0044	(24·0–40·5)	0·10
≤245	11/40 (28%)	1/13 (8%)	10/27 (37%)	0·036	8 (75%)	0·025
>245	29/40 (73%)	12/13 (92%)	17/27 (63%)	..	8 (25%)	..
Hypersensitive troponin I, pg/mL	3·4 (1·1–9·1)	3·3 (3·0–163·0)	3·5 (0·7–5·4)	0·075	(9·4–12·3)	0·011
>28 (99th percentile)	5/41 (12%)	4/13 (31%)	1/28 (4%)	0·017		
Procalcitonin, ng/mL	0·1 (0·1–0·1)	0·1 (0·1–0·4)	0·1 (0·1–0·1)	0·031		
<0·1	27/39 (69%)	6/12 (50%)	21/27 (78%)	0·029		
≥0·1 to <0·25	7/39 (18%)	3/12 (25%)	4/27 (15%)	..		
≥0·25 to <0·5	2/39 (5%)	0/12	2/27 (7%)	..		
≥0·5	3/39 (8%)	3/12 (25%)*	0/27	..		
Bilateral involvement of chest radiographs	40/41 (98%)	13/13 (100%)	27/28 (96%)	0·68		

- UCI: Leucopenia-linfopenia Aumento citoquinas proinflamatorias

Huang, Lancet January 24 2020; 395:497-506

Laboratorio

Blood routine	
Leucocytes (×10⁹ per L; normal range 3·5–9·5)	7·5 (3·6)
Increased	24 (24%)
Decreased	9 (9%)
Neutrophils (×10⁹ per L; normal range 1·8–6·3)	5·0 (3·3–8·1)
Increased	38 (38%)
Lymphocytes (×10⁹ per L; normal range 1·1–3·2)	0·9 (0·5)
Decreased	35 (35%)
Platelets (×10⁹ per L; normal range 125·0–350·0)	213·5 (79·1)
Increased	4 (4%)
Decreased	12 (12%)
Haemoglobin (g/L; normal range 130·0–175·0)	129·8 (14·8)
Decreased	50 (51%)

Coagulation function	
Activated partial thromboplastin time (s; normal range 21·0–37·0)	27·3 (10·2)
Increased	6 (6%)
Decreased	16 (16%)
Prothrombin time (s; normal range 10·5–13·5)	11·3 (1·9)
Increased	5 (5%)
Decreased	30 (30%)
D-dimer (μg/L; normal range 0·0–1·5)	0·9 (0·5–2·8)
Increased	36 (36%)

Chen, Lancet, 2020: 395:507-13

Laboratorio

Blood biochemistry	
Albumin (g/L; normal range 40·0–55·0)	31·6 (4·0)
Decreased	97 (98%)
Alanine aminotransferase (U/L; normal range 9·0–50·0)	39·0 (22·0–53·0)
Increased	28 (28%)
Aspartate aminotransferase (U/L; normal range 15·0–40·0)	34·0 (26·0–48·0)
Increased	35 (35%)
Total bilirubin (μmol/L; normal range 0·0–21·0)	15·1 (7·3)
Increased	18 (18%)
Blood urea nitrogen (mmol/L; normal range 3·6–9·5)	5·9 (2·6)
Increased	6 (6%)
Decreased	17 (17%)
Serum creatinine (μmol/L; normal range 57·0–111·0)	75·6 (25·0)
Increased	3 (3%)
Decreased	21 (21%)
Creatine kinase (U/L; normal range 50·0–310·0)	85·0 (51·0–184·0)
Increased	13 (13%)
Decreased	23 (23%)
Lactate dehydrogenase (U/L; normal range 120·0–250·0)	336·0 (260·0–447·0)
Increased	75 (76%)
Myoglobin (ng/mL; normal range 0·0–146·9)	49·5 (32·2–99·8)
Increased	15 (15%)
Glucose (mmol/L; normal range 3·9–6·1)	7·4 (3·4)
Increased	51 (52%)
Decreased	1 (1%)

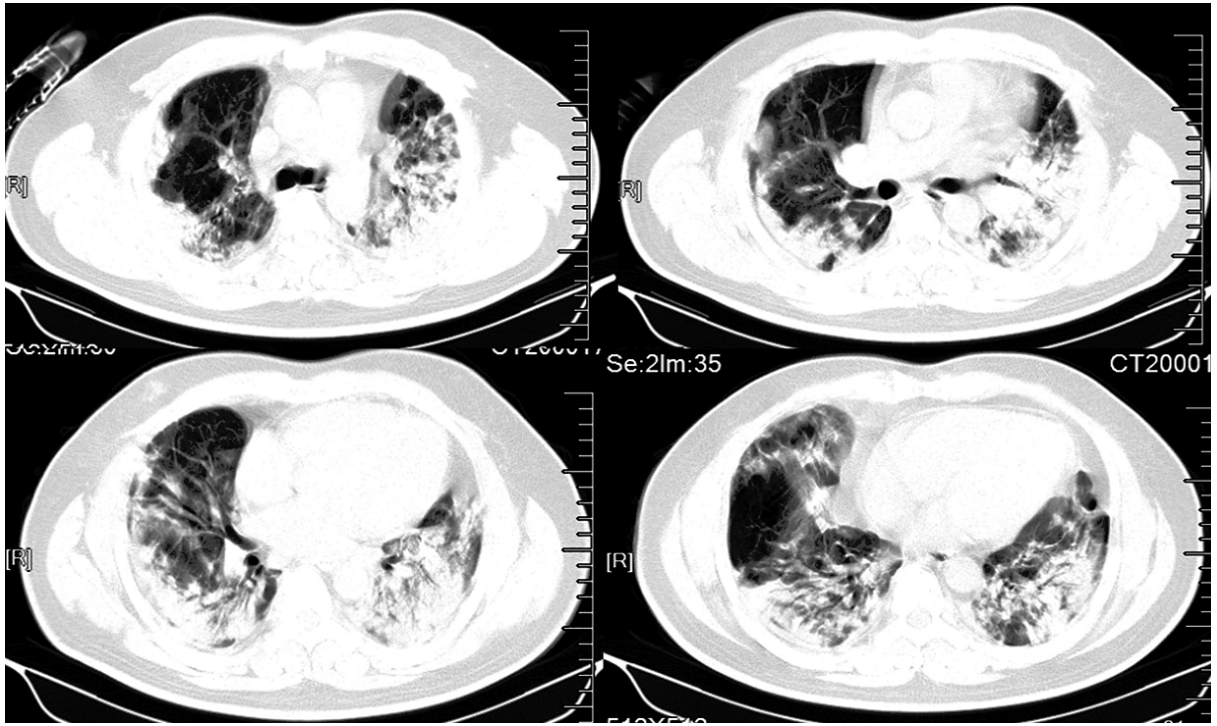
Chen, Lancet, 2020: 395:507-13

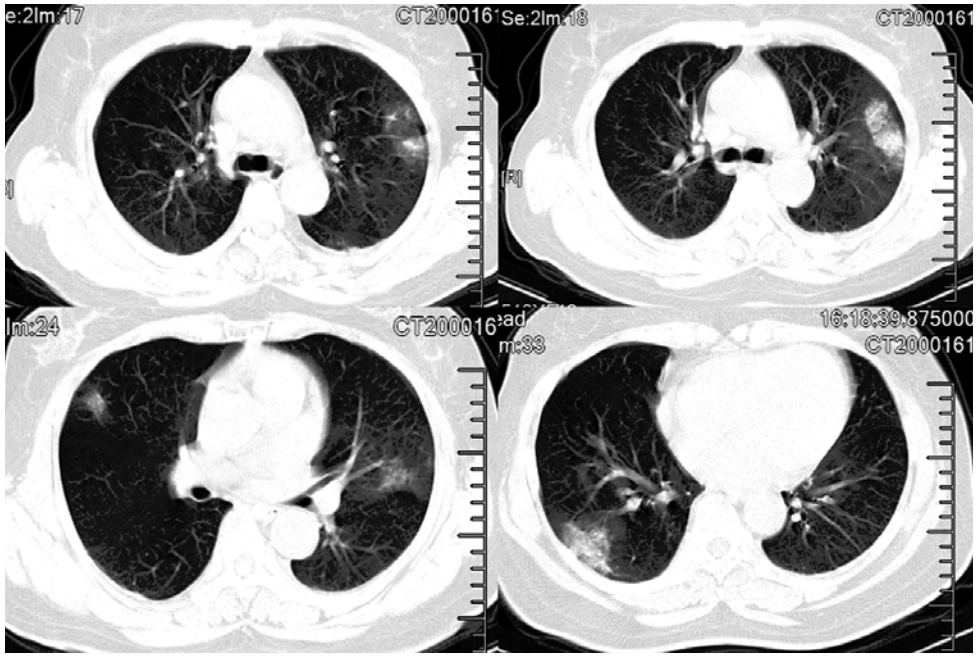
Laboratorio

Infection-related biomarkers	
Procalcitonin (ng/mL; normal range 0·0–5·0)	0·5 (1·1)
Increased	6 (6%)
Interleukin-6 (pg/mL; normal range 0·0–7·0)	7·9 (6·1–10·6)
Increased	51 (52%)
Erythrocyte sedimentation rate (mm/h; normal range 0·0–15·0)	49·9 (23·4)
Increased	84 (85%)
Serum ferritin (ng/mL; normal range 21·0–274·7)	808·7 (490·7)
Increased	62 (63%)
C-reactive protein (mg/L; normal range 0·0–5·0)*	51·4 (41·8)
Increased	63/73 (86%)

Chen, Lancet, 2020: 395:507-13

Opacidades subpleurales bilaterales

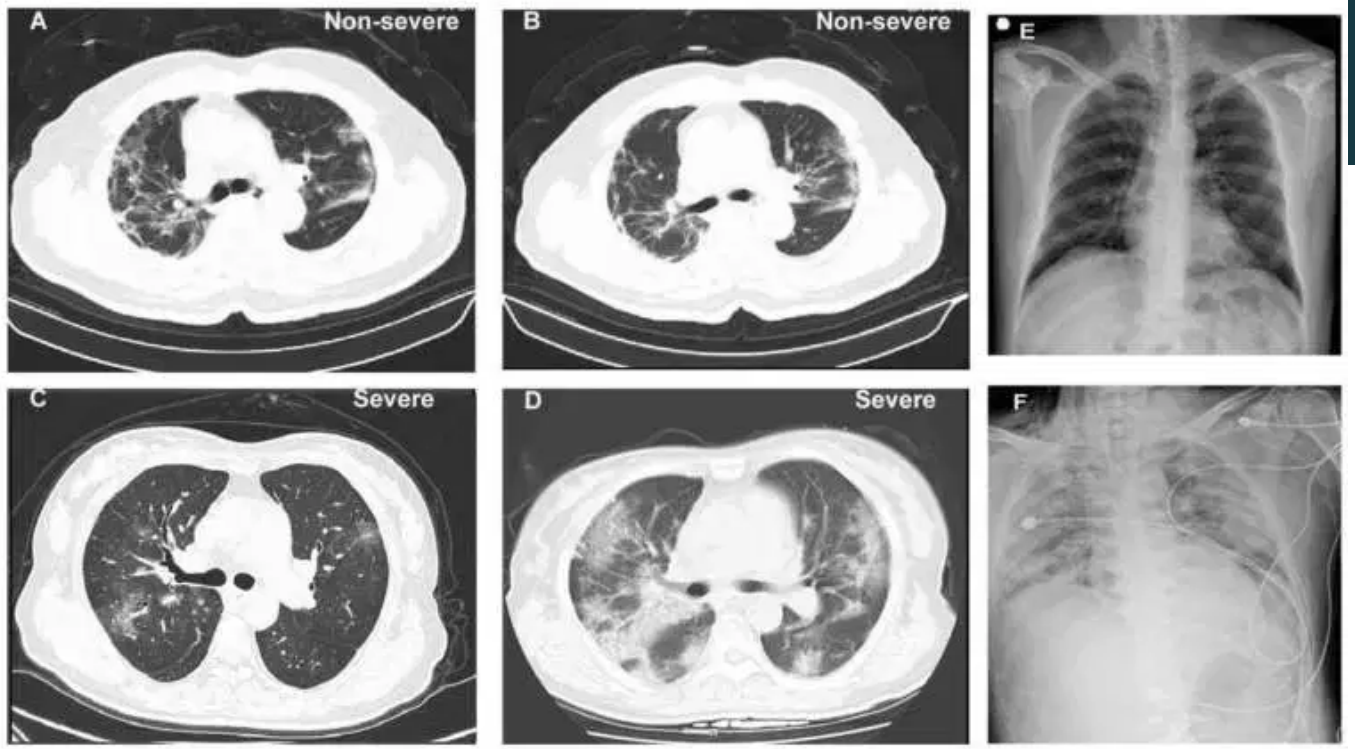




Chest x-ray and CT findings	
Unilateral pneumonia	25 (25%)
Bilateral pneumonia	74 (75%)
Multiple mottling and ground-glass opacity	14 (14%)

Huang, Lancet January 24 2020; 395:497-506

Figure S1. Representative chest radiographic manifestations in a non-severe and a severe case with COVID-19



Transverse chest computed tomography imaging from a 50-year-old male with non-severe COVID-19, at 8 days after hospital admission (Panel A) and at 15 days after hospital admission (following the receipt of supportive treatment) (Panel B) showing multilobular and subpleural ground-glass opacity and consolidation. The transverse chest computed tomography imaging from a 60-year-old female with severe COVID-19 at 1 day after hospital admission (Panel C) showing multilobular ground-glass opacity and consolidation and at 4 days after hospital admission (following the receipt of supportive treatment) showing rapid radiologic progression, evidenced by multilobar subsegmental consolidation (Panel D).

Chest X-ray imaging from a 39-year-old male with non-severe COVID-19 after hospital admission demonstrating minor infiltrates in the right lower lobe (Panel E) and from 49-year-old male with severe COVID-19 after hospital admission demonstrating diffuse patchy shadowing and consolidation (Panel F).

W Guan Z et al, NEJM 2020

Afectación pulmonar

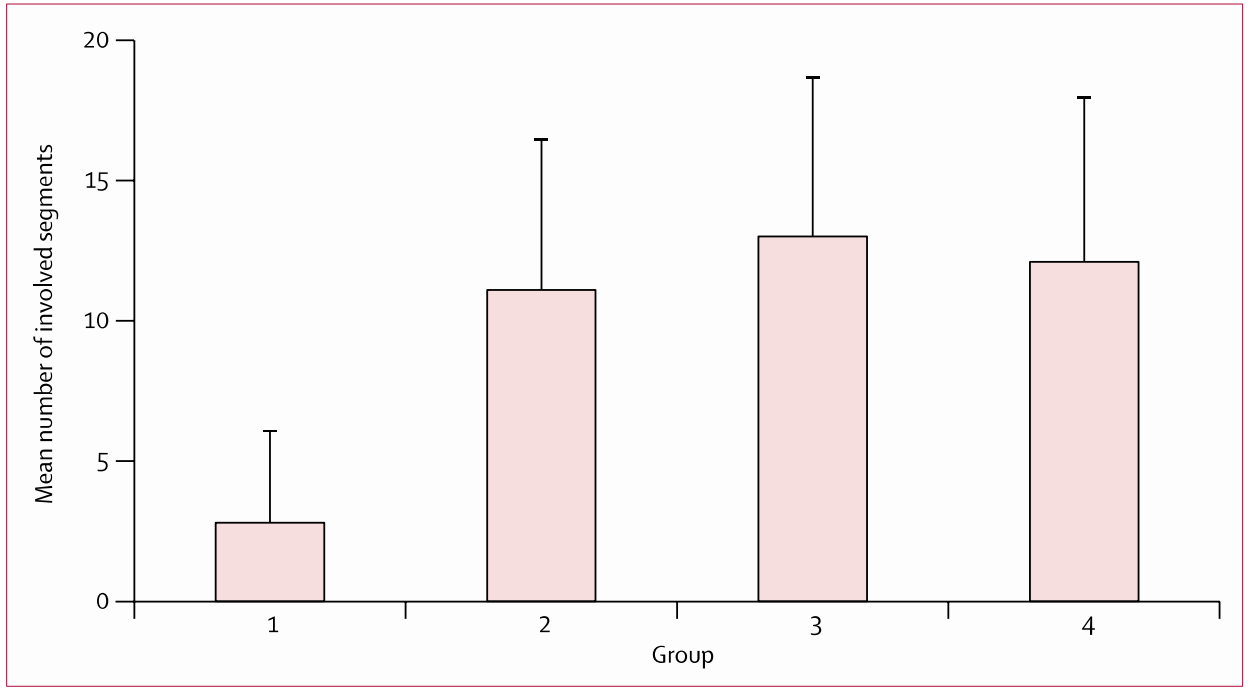


Figure 1: **Number of involved lung segments at various timepoints from symptom onset**
Bars show the mean number of involved lung segments on CT scans from patients in group 1 (scan before symptom onset; n=15), group 2 (scan ≤1 week after symptom onset; n=21), group 3 (scan >1 week to 2 weeks after symptom onset; n=30), and group 4 (scan >2 weeks to 3 weeks after symptom onset; n=15).

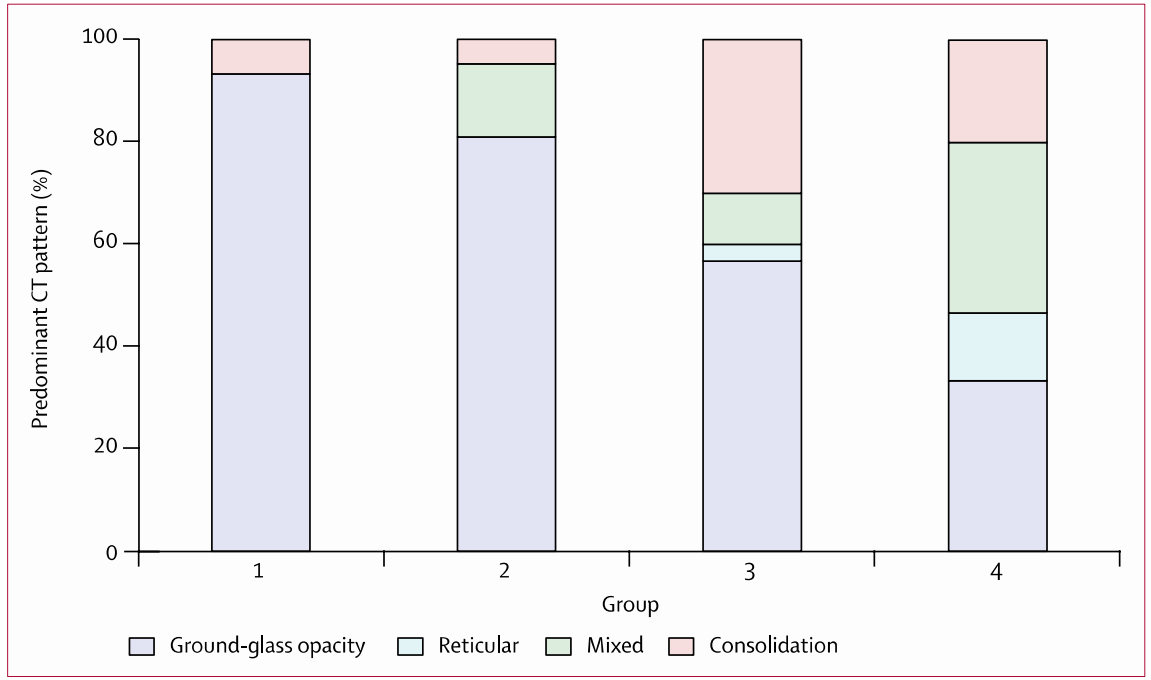


Figure 3: **Distribution of various patterns of lung changes on CT scans at various timepoints from symptom onset**
Stacked bars show the proportion of patients in whom the predominant CT pattern was ground-glass opacity, reticular, mixed, or consolidation. Patients were grouped by time from symptom onset: group 1 (scan before symptom onset; n=15), group 2 (scan ≤1 week after symptom onset; n=21), group 3 (scan >1 week to 2 weeks after symptom onset; n=30), and group 4 (scan >2 weeks to 3 weeks after symptom onset; n=15).

Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. Lancet Infect Dis 2020

Afectación pulmonar

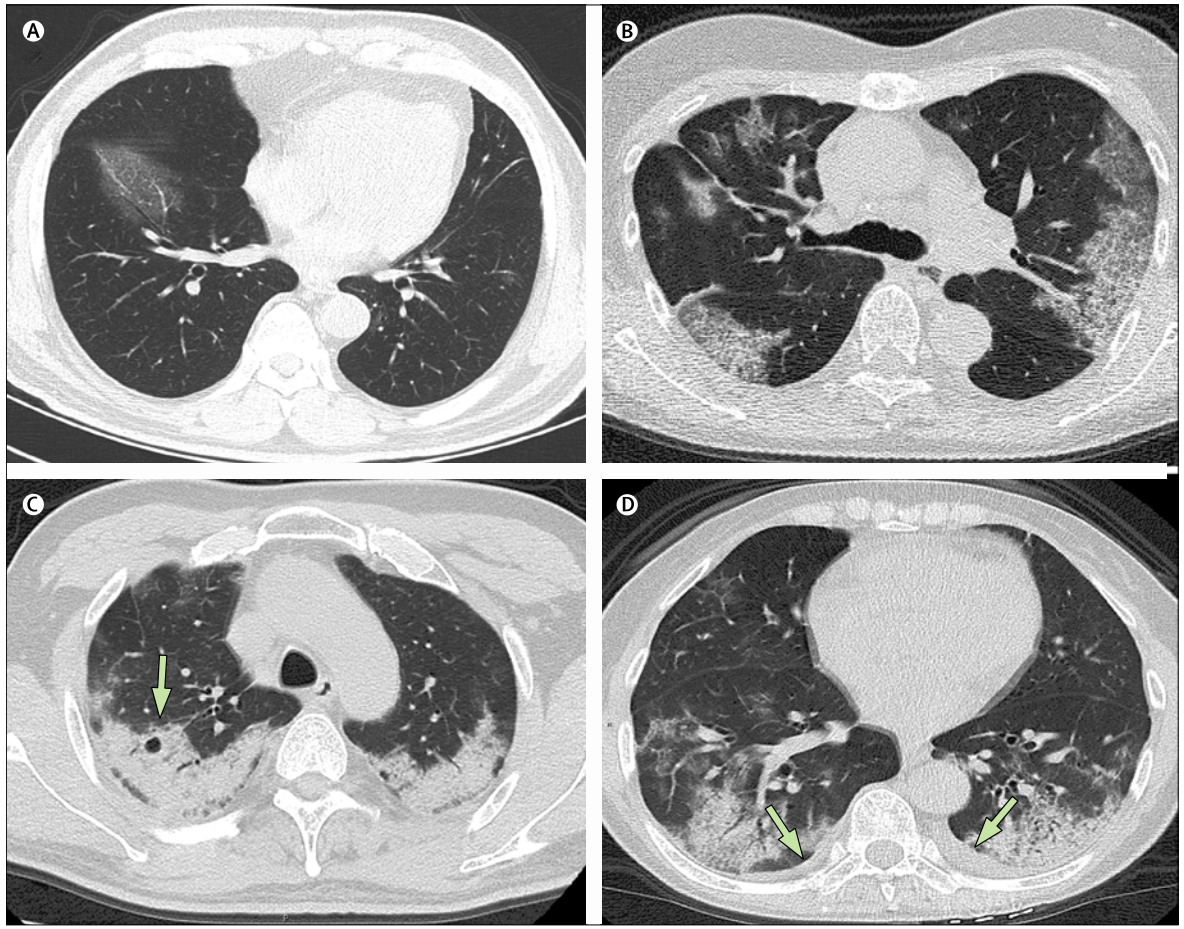


Figure 2: **Transverse thin-section CT scans in patients with COVID-19 pneumonia**
(A) 56-year-old man, day 3 after symptom onset: focal ground-glass opacity associated with smooth interlobular and intralobular septal thickening in the right lower lobes. (B) 74-year-old woman, day 10 after symptom onset: bilateral, peripheral ground-glass opacity associated with smooth interlobular and intralobular septal thickening (crazy-paving pattern). (C) 61-year-old woman, day 20 after symptom onset: bilateral and peripheral predominant consolidation pattern with a round cystic change internally (arrow). (D) 63-year-old woman, day 17 after symptom onset: bilateral, peripheral mixed pattern associated with air bronchograms in both lower and upper lobes, with a small amount of pleural effusion (arrows).

Figure 5: **Transverse thin-section serial CT scans from a 77-year-old man**
(A) Day 5 after symptom onset: patchy ground-glass opacities affecting the bilateral, subpleural lung parenchyma. (B) Day 15: subpleural crescent-shaped ground-glass opacities in both lungs, as well as posterior reticular opacities and subpleural crescent-shaped consolidations. (C) Day 20: expansion of bilateral pulmonary lesions, with enlargement and denser pulmonary consolidations and bilateral pleural effusions (arrows). The patient died 10 days after the final scan.

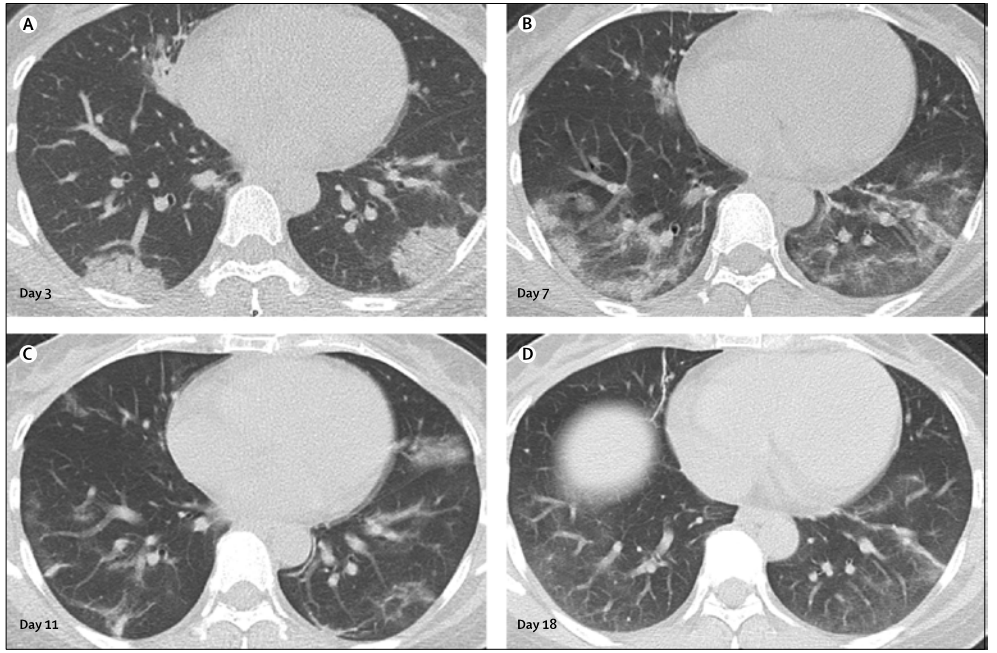


Figure 6: **Transverse thin-section serial CT scans from a 42-year-old woman**
(A) Day 3 after symptom onset: multifocal consolidations affecting the bilateral, subpleural lung parenchyma. (B) Day 7: the lesions had increased in extent and the density became heterogeneous, with internal bronchovascular bundle thickening. (C) Day 11: previous opacifications being dissipated into ground-glass opacities and irregular linear opacities. (D) Day 18: further resolution of the lesions. The patient was discharged from hospital 2 days after the final scan.

Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. Lancet Infect Dis 2020

Evolución – complicaciones

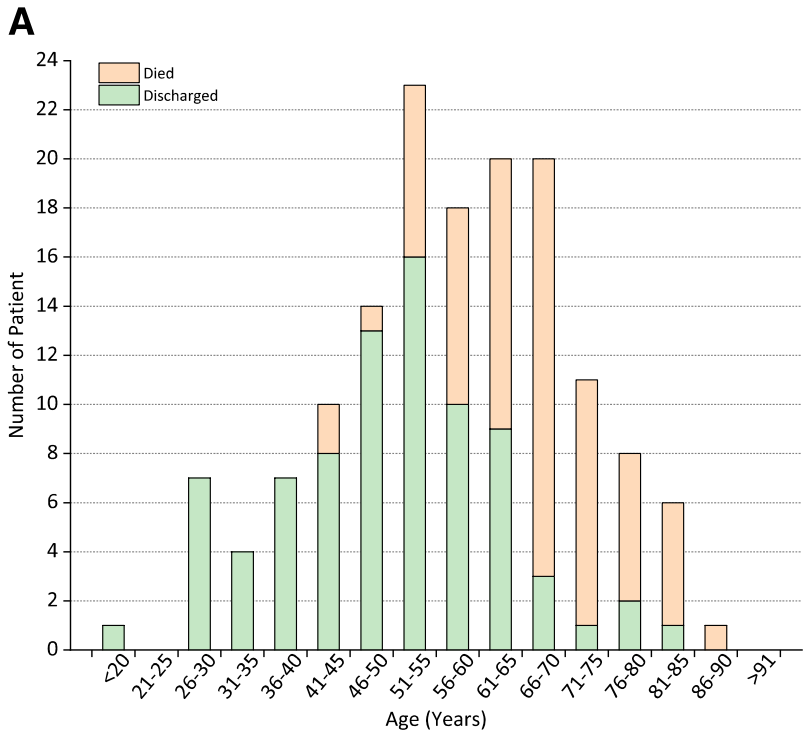
Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

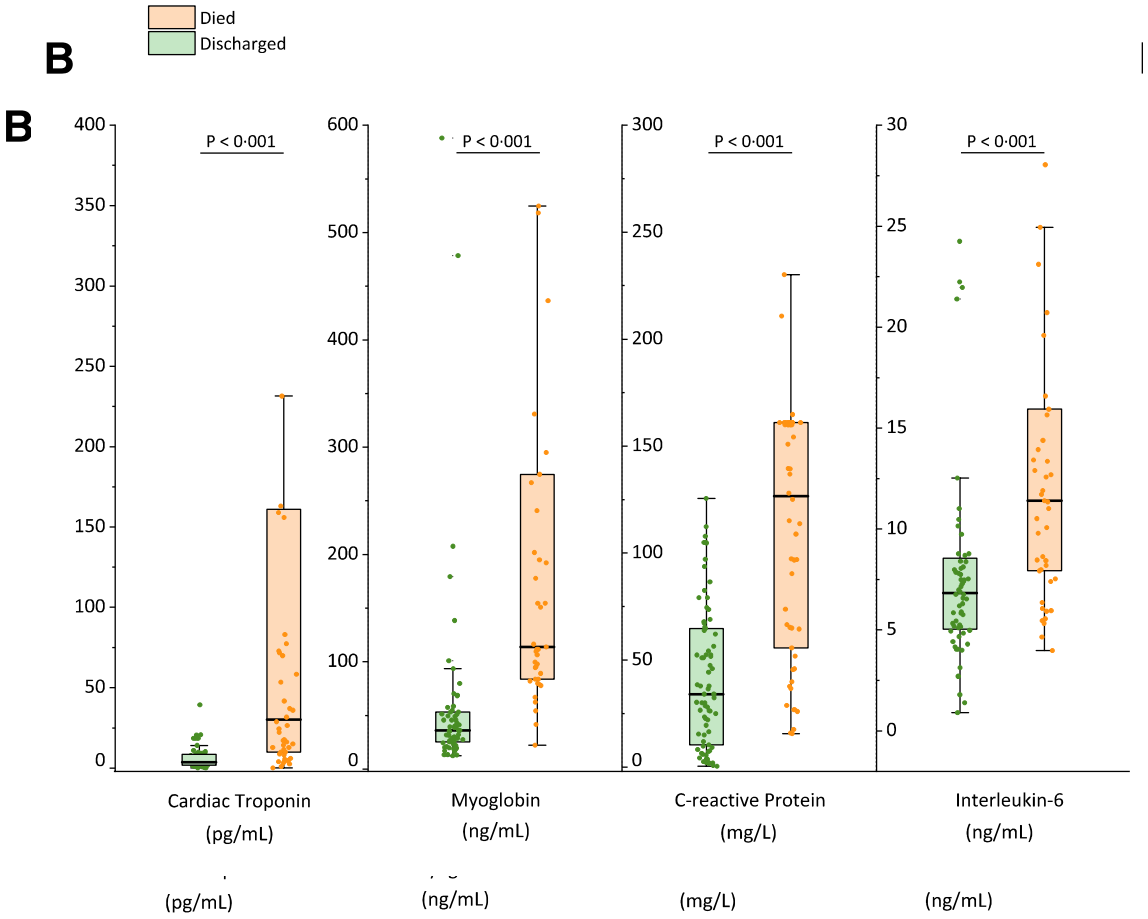
Nanshan Chen, Min Zhou*, Xuan Dong*, Jieming Qu*, Fengyun Gong, Yang Han, Yang Qiu, Jingli Wang, Ying Liu, Yuan Wei, Jia'an Xia, Ting Yu, Xinxin Zhang, Li Zhang*

Comorbid conditions	
Any	33 (33%)
ARDS	17 (17%)
Acute renal injury	3 (3%)
Acute respiratory injury	8 (8%)
Septic shock	4 (4%)
Ventilator-associated pneumonia	1 (1%)

Chen, Lancet, 2020: 395:507-13

Mortalidad



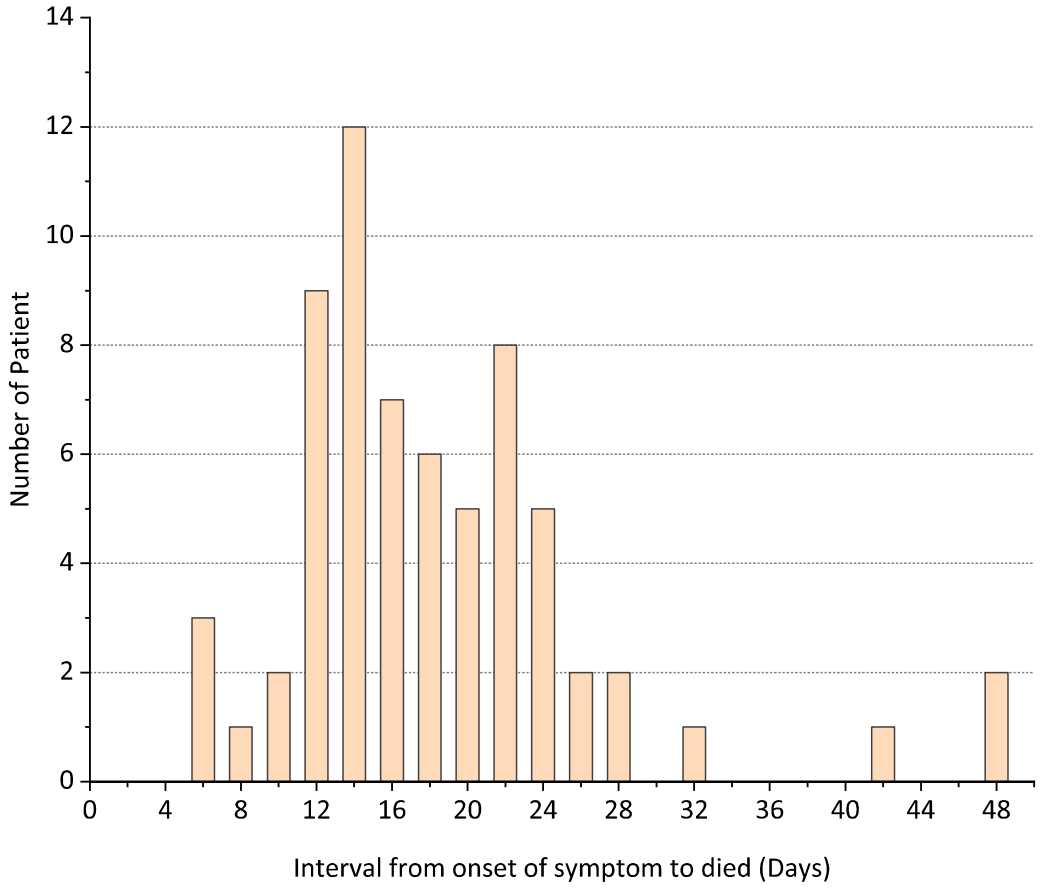


Edad 50 vs 67 años
Cardiopatía
Infección 2º
Linfopenia, hipoalbuminemia, trombocitopenia
Ferritina, Il6, PCR

Clinical predictors of mortality due to COVID-19 based on an analysis of data of 150 patients from Wuhan, China Intensive Care Med https://doi.org/10.1007/s00134-020-05991-x

Mortalidad

C



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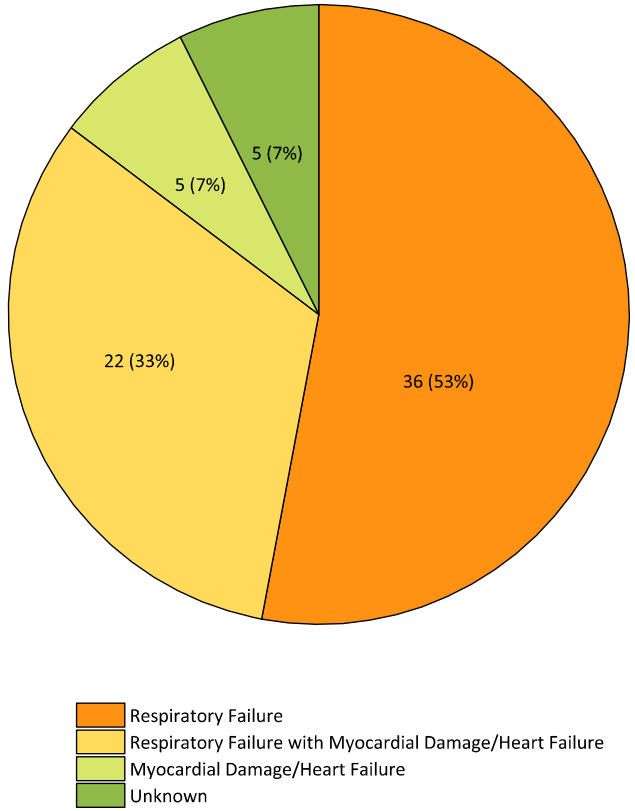

Clinical predictors of mortality due to COVID-19 based on an analysis of data of 150 patients from Wuhan, China Intensive Care Med https://doi.org/10.1007/s00134-020-05991-x

Mortalidad

- Tiempo desde que se inician los síntomas hasta la muerte: 14 días (6 a 41 días)

>70 años vs < 70 años (12 vs 20 días)

Primer reporte, 41 casos: mortalidad 15% (10% VMI, 5% ECMO)

- Mortalidad 2,84
- Media de edad 75 años (48-89 años)

- Citokinas proinflamatorias → SDRA
- Vidrio esmerilado regiones subpleurales, bilaterales

Rothan, Journal of Autoimmunity. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak Feb 2020

Embarazo

- 13 embarazadas
- 22 a 36 años
- 2 mujeres <28 sem

- 77% fiebre, 23% disnea

- 1 paciente SDRA → 7,6% neumonia
- Similar a población no embarazada

Clinical manifestations and outcome of SARS-CoV-2 infection during pregnancy
Yangli Liu Journal of Infection

Tratamiento

Treatment	
Oxygen therapy	75 (76%)
Mechanical ventilation	
Non-invasive (ie, face mask)	13 (13%)
Invasive	4 (4%)
CRRT	9 (9%)
ECMO	3 (3%)
Antibiotic treatment	70 (71%)
Antifungal treatment	15 (15%)
Antiviral treatment	75 (76%)
Glucocorticoids	19 (19%)
Intravenous immunoglobulin therapy	27 (27%)

- Ningun antiviral hasta ahora aprovado eficacia en ensayos clínicos

- Estudios en marcha:
- Kaletra: Lopinavir/ritonavir
- Lopinavir actividad contra SARS in vitro.
- Kaletra + rivabirina
- Kaletra INFgama
- Cloroquina
- SARS: primeras 48 horas
- Remdesivir (MERS) uso compasivo en EEUU COVID-19. Estudio en marcha
- Anticuerpos monoclonales

Chen, Lancet, 2020: 395:507-13