Société Tunisienne de Pathologie Infectieuse

COVID-19 : MANIFESTATIONS CLINIQUES

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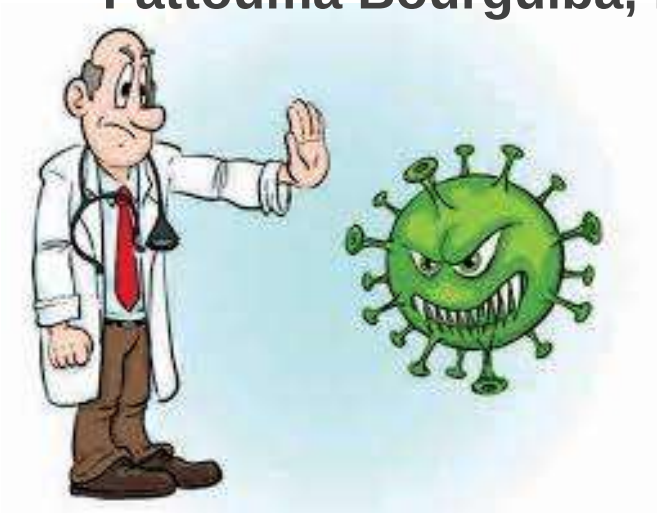


Le 19/04/2020

Introduction

Introduction

- **La maladie à coronavirus 2019 :**

- Covid-19
- Maladie infectieuse **émergente**
- Coronavirus: virus à ARN simple brin, enveloppé
- Pathogène chez l’homme et chez l’animal
- Responsable d’infections respiratoires de sévérité variable

Situation épidémiologique dans le monde

Covid-19 réalise une pandémie, déclarée le **11 Mars 2020** par l'**OMS**

Organisation mondiale de la Santé

Situation épidémiologique nationale 19/4/2020

1er cas (2/3/2020)

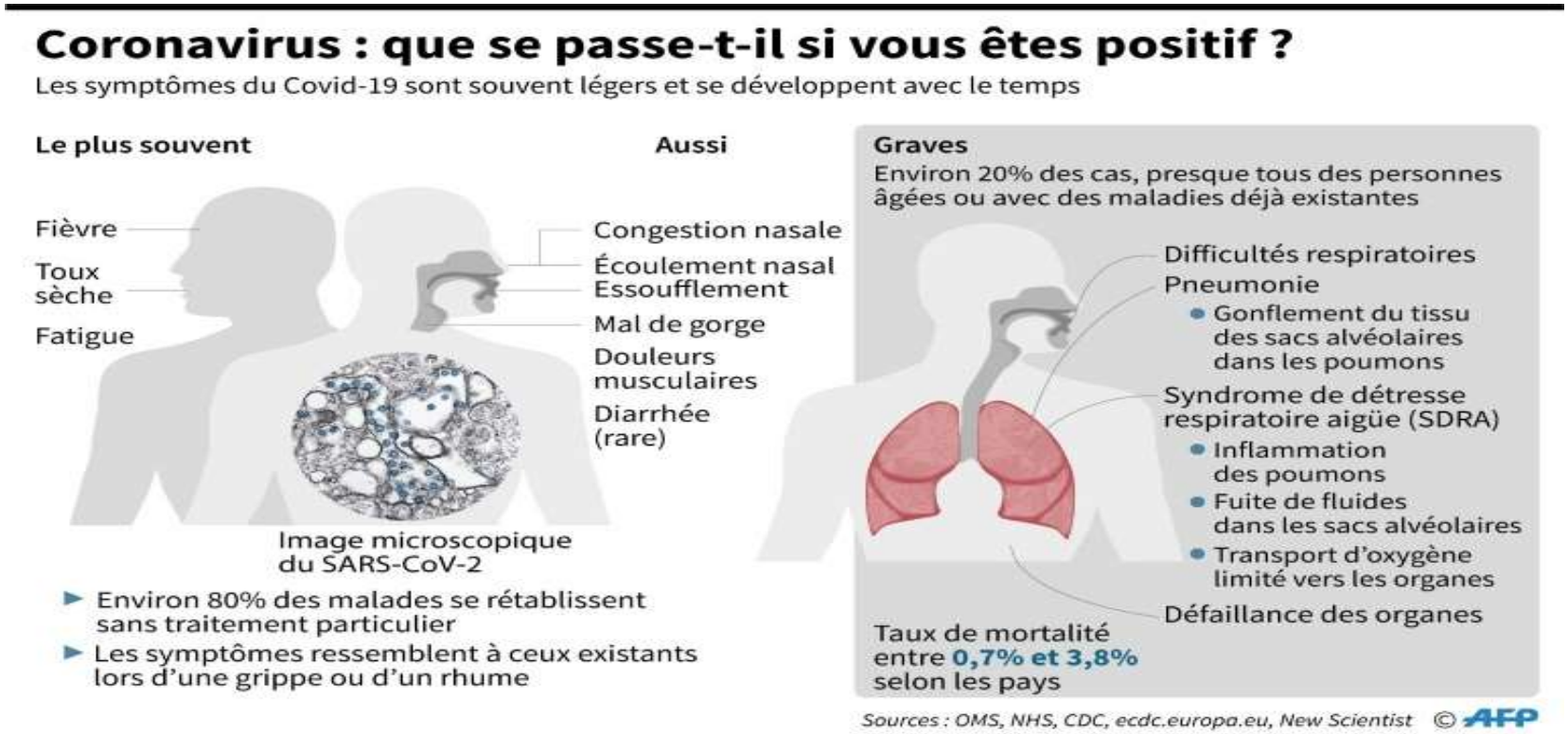
866 cas
(19/4/2020): 37 décès

Prévalence:
73/1 M habitants

Manifestations cliniques

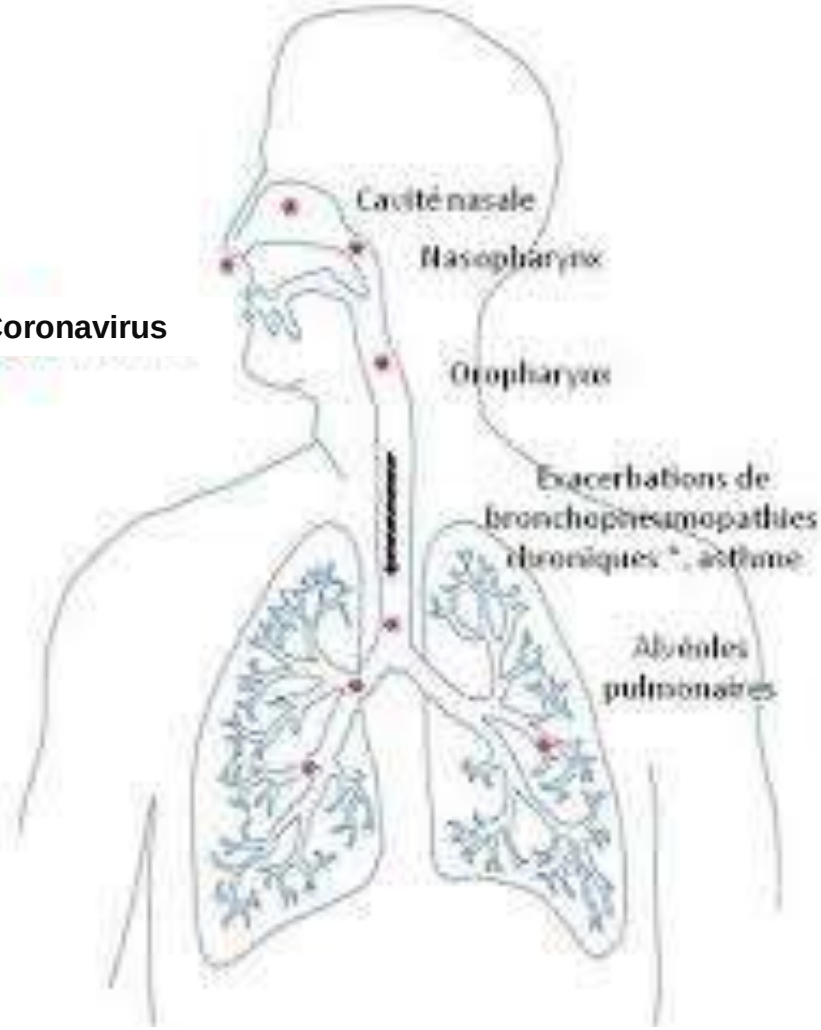
Manifestations cliniques

Covid-19: infections respiratoires de sévérité variable, allant du simple rhume à des formes graves pouvant évoluer vers un syndrome de détresse respiratoire aiguë



Manifestations cliniques

Coronavirus

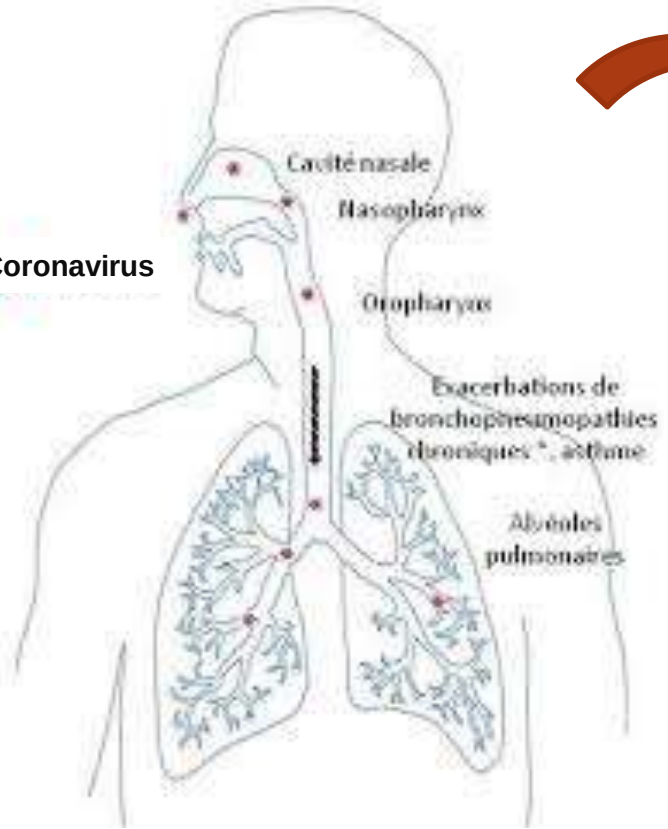


Organisation mondiale de la Santé

- Incubation : 1 – 14 jours.
- Le plus souvent : 5 jours.

Manifestations cliniques

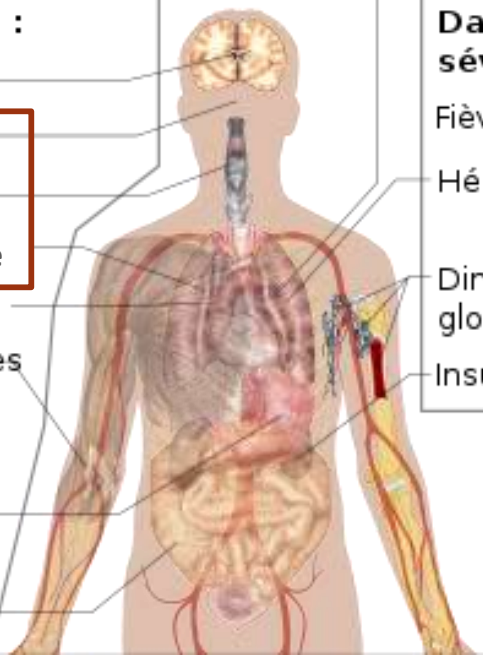
Coronavirus



Sympômes communs : Fièvre | Toux sèche | Fatigue

Symptômes rares :

- Céphalée
- Congestion nasale
- Maux de gorge
- **Anosmie / Dysgueusie**
- Souffle court
- Douleurs musculaires ou articulaires
- Frissons
- Nausée et/ou vomissement
- Diarrhéee

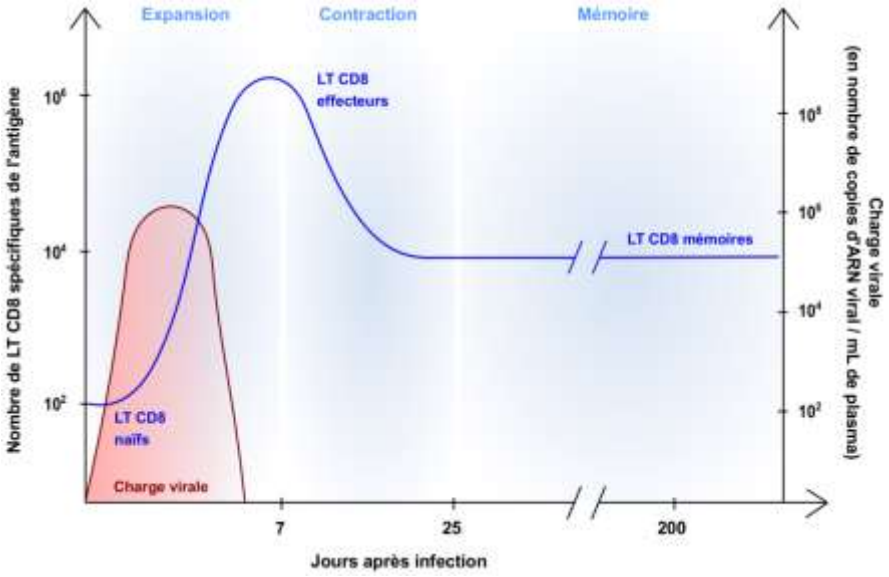


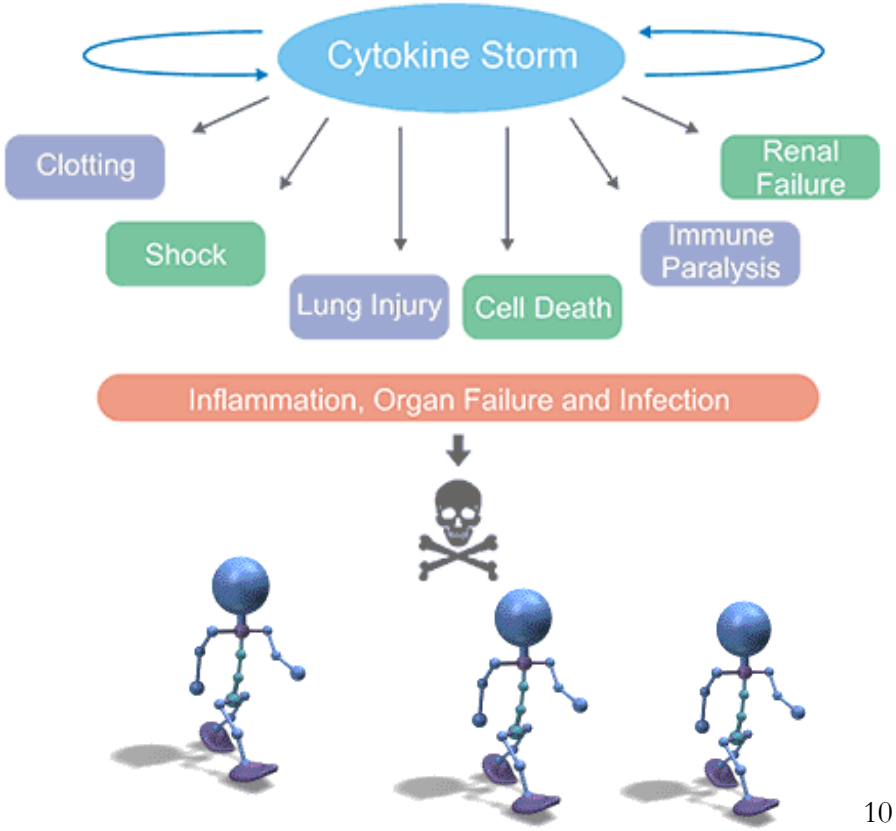
Dans les cas sévères :

- Fièvre élevée
- Hémoptysie
- Diminution des globules blancs
- Insuffisance rénale

Manifestations cliniques

- La gravité: libération incontrôlée de cytokines (5-7ème jour) : « tempête des cytokines ».

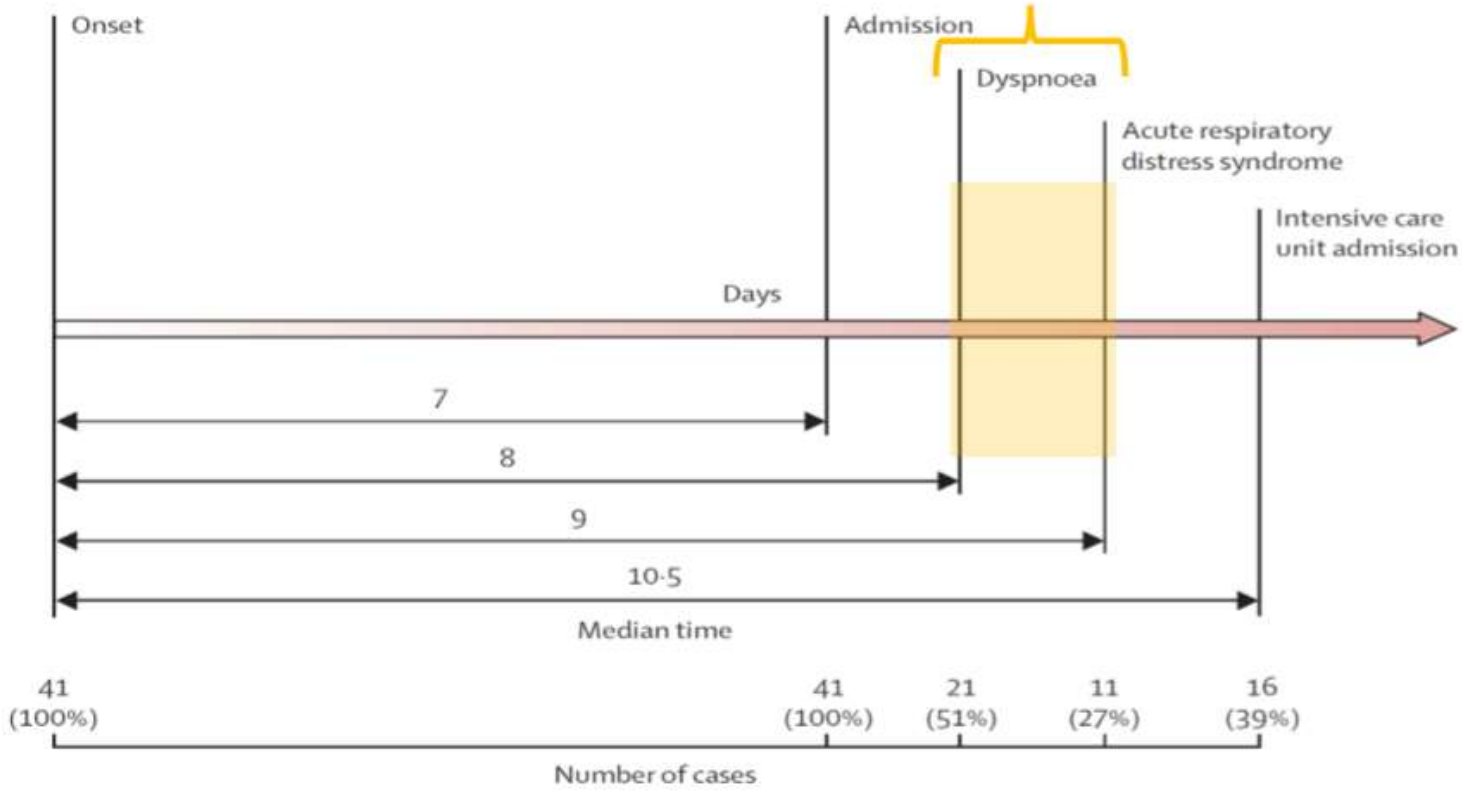




Mehta, Consider cytokine storm syndromes and immunosuppression. The lancet. In press 16 Mars 2020.

Manifestations cliniques

J8-J9 période d'aggravation clinique



Huang C et al. The lancet. Janvier 2020.

Manifestations cliniques

Journal Pre-proof

Clinical characteristics of non-critically ill patients with novel coronavirus infection (COVID-19) in a Fangcang Hospital

Xiaobing Wang, Jun Fang, Yue Zhu, Liping Chen, Feng Ding, Rui Zhou, Liuqing Ge, Fan Wang, Qian Chen, Yongxi Zhang, Qiu Zhao

PII: S1198-743X(20)30177-4

DOI: https://doi.org/10.1016/j.cmi.2020.03.032

Reference: CMI 1994

To appear in: *Clinical Microbiology and Infection*

Received Date: 6 March 2020

Revised Date: 27 March 2020

Accepted Date: 27 March 2020

	Patients in total (n=1012)
Signs and Symptoms on admission	
Asymptomatic condition	30(3.0%)
Fever	761(75.2%)
Highest temperature, °C	
37.3-38.0	182(18.0%)
38.1-39	424(41.9%)
>39	155(of 1012,15.3%)
Chills	182(18.0%)
Runny nose	57(5.6%)
Nasal congestion	69(6.9%)
Sore throat	144(14.2%)
Cough	531(52.4%)
Expectoration	220(21.7%)
Dyspnea	231(22.8%)
Headache	152(15.0%)
Myalgia	170(16.8%)
Vomiting	36(3.6%)
Diarrhea	152(15.0%)
Abdominal pain	37(3.7%)

Manifestations cliniques

Journal Pre-proof

Clinical characteristics of coronavirus disease 2019 (COVID-19) in China: a systematic review and meta-analysis

Leiwen Fu MD , Bingyi Wang BE , Tanwei Yuan MD , Xiaoting Chen MD , Yunlong Ao MD , Tom Fitzpatrick MD , Peiyang Li MD , Yiguo Zhou MD , Yifan Lin PhD , Qibin Duan PhD , Ganfeng Luo MD , Song Fan MD , Yong Lu MD , Anping Feng MD , Yuewei Zhan MD , Bowen Liang MD , Weiping Cai MD , Lin Zhang PhD , Xiangjun Du PhD , Yuelong Shu PhD , Linghua Li MD , Huachun Zou PhD

PII: S0163-4453(20)30170-5
DOI: https://doi.org/10.1016/j.jinf.2020.03.041
Reference: YJINF 4515

To appear in: *Journal of Infection*

Accepted date: 15 March 2020

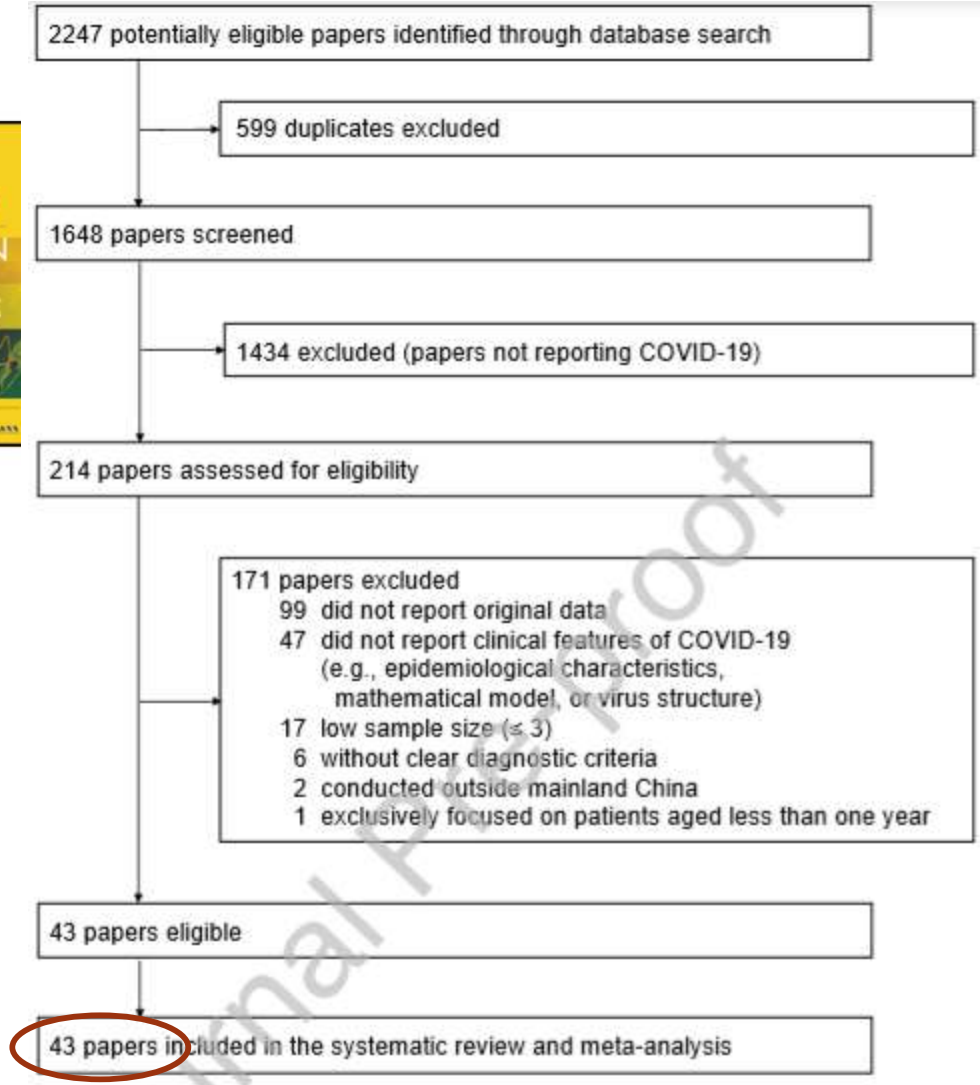


Figure 1 Flow diagram of publication selection

Manifestations cliniques

Clinical symptoms	No. Reports (n)	No. Patients (n)	Prevalence% (95% CI)	I^2 (%)	Egger's test
Fever	36	2817	83.3 (78.4-87.7)	95%	<0.001
Cough	35	2792	60.3 (54.2-66.3)	81%	0.136
Fatigue	23	2116	38.0 (29.8-46.5)	87%	0.960
Myalgia	21	2094	28.5 (21.2-36.2)	89%	0.009
Increased sputum production	16	2042	26.9 (18.3-36.4)	91%	0.550
Shortness of breath	13	1981	24.9 (16.6-34.4)	85%	0.147
Chest pain	9	423	14.9 (4.9-28.4)	88%	0.144
Chill	4	1222	15.0 (0.3-41.4)	77%	0.385
Headache	20	2312	14.0 (9.9-18.6)	75%	0.441
Sore throat	18	2086	12.3 (8.5-16.5)	66%	0.547
Dizziness	4	270	7.6 (0.0-23.5)	53%	0.228
Diarrhea	25	2415	8.4 (4.8–12.6)	82%	0.007
Rhinorrhea	6	290	3.5 (0.8–7.4)	0%	0.014
Nausea or vomiting	7	1452	3.6 (1.0–7.4)	48%	0.826
Hemoptysis	3	1202	2.0 (0.0–11.4)	65%	0.036
Nasal congestion	5	1248	1.8 (0.4–3.9)	2%	0.209
No obvious symptoms	11	542	5.6 (1.4–11.6)	63%	0.029

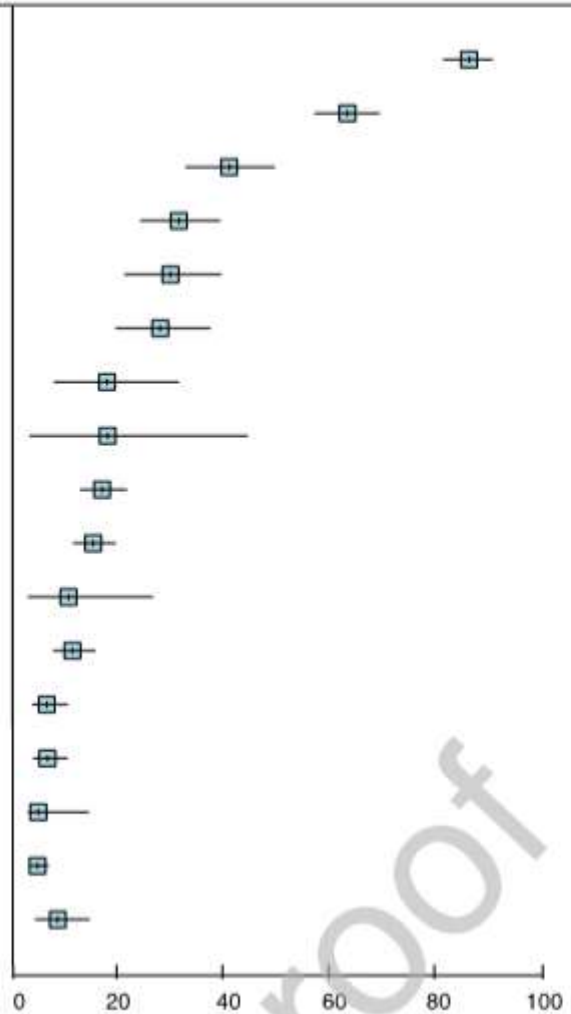


Figure 2 Meta-analysis of the prevalence of clinical symptoms among COVID-19 patients

Manifestations cliniques

	No. Reports (n)	No. Patients (n)	Prevalence% (95% CI)	I^2 (%)	Egger's test
Treatment					
Antiviral therapy	14	1999	90.0 (74.1-99.0)	99%	0.003
Antibiotic treatment	12	1903	71.5 (50.0-89.7)	97%	0.313
Oxygen therapy	5	1419	54.8 (6.6-97.9)	98%	0.612
Corticosteroid	12	1959	30.1 (16.7-46.4)	95%	0.151
Immunoglobulin	10	1759	28.1 (19.6-37.3)	91%	0.006
Invasive mechanical ventilation	6	1564	22.2 (1.8-54.5)	99%	0.146
Mechanical ventilation	6	1430	13.8 (1.0-35.2)	92%	0.214
Noninvasive ventilation	4	1377	8.5 (0.2-24.8)	85%	0.311
Continuous renal replacement therapy	4	1377	3.3 (0.0-13.0)	87%	0.126
Extracorporeal membrane oxygenation	3	1336	1.6 (0.0-8.9)	80%	0.126
Complications					
ARDS	9	1616	15.7 (5.0-30.4)	93%	0.155
Cardiac failure	4	245	6.5 (2.2-12.2)	0%	0.643
Shock	5	1389	4.3 (0.3-11.1)	86%	0.068
Renal insufficiency	6	1443	2.7 (0.0-8.1)	79%	0.077
Severity and mortality					
Severe cases	15	2226	25.6 (17.4-34.9)	86%	0.068
Death	15	2357	3.6 (1.1-7.2)	86%	0.014

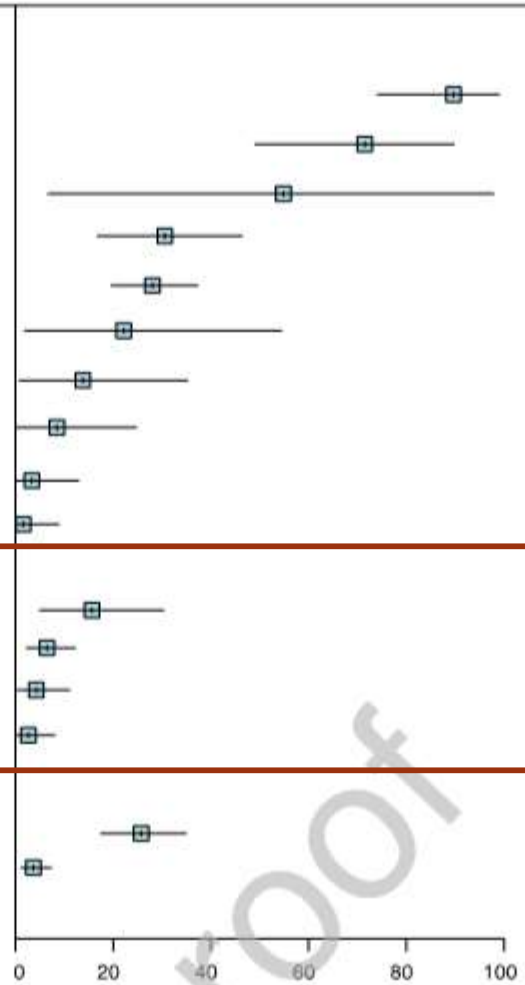
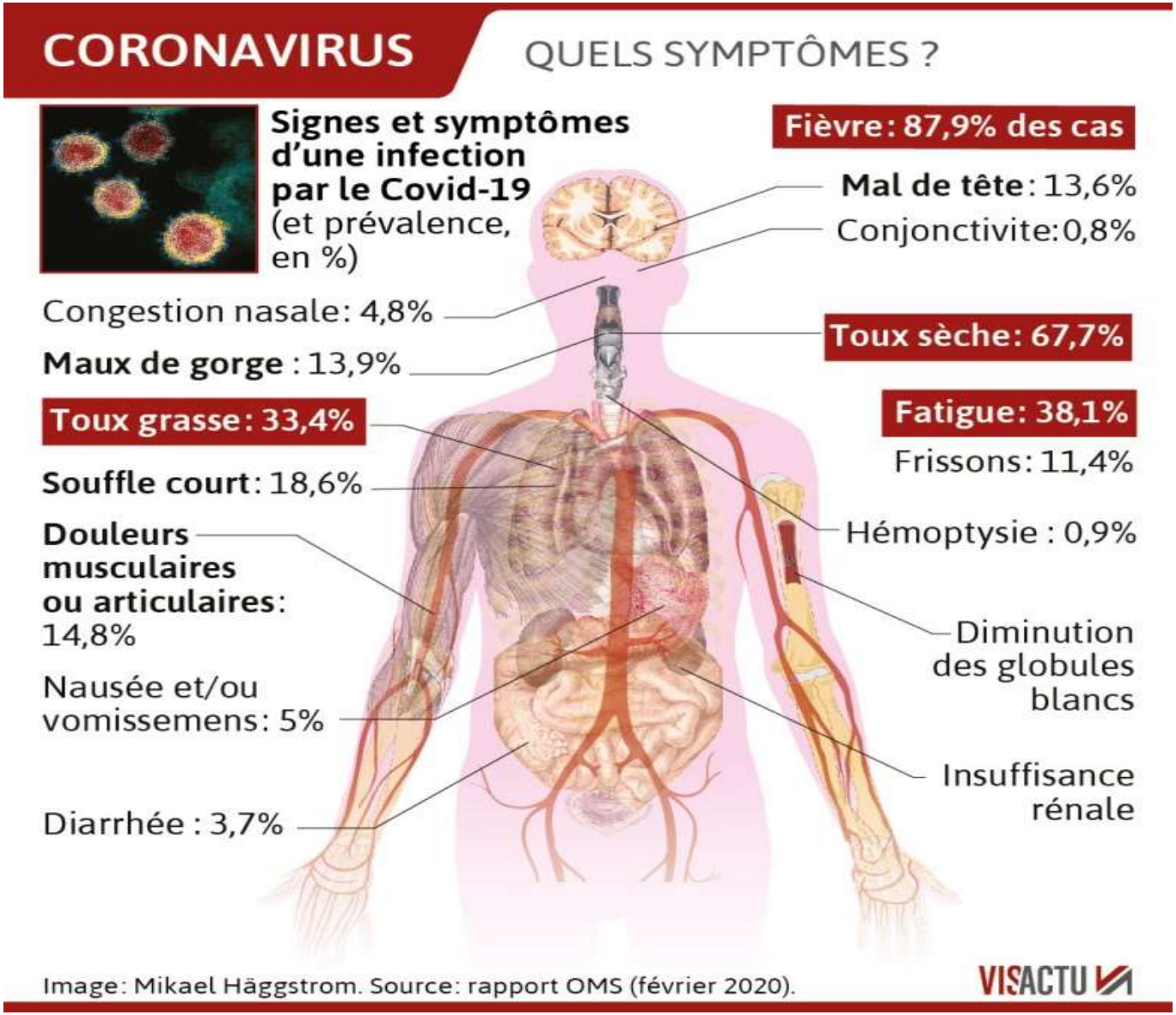


Figure 4 Meta-analysis of the prevalence of chest CT findings, complications, severe cases, and mortality among COVID-19 patients

Manifestations cliniques



Manifestations cliniques

CASE REPORT

First case of COVID-19 complicated with fulminant myocarditis: a case report and insights

Jia-Hui Zeng[1] · Ying-Xia Liu[2] · Jing Yuan[3] · Fu-Xiang Wang[3] · Wei-Bo Wu[3] · Jin-Xiu Li[4] · Li-Fei Wang[5] · Hong Gao[6] · Yao Wang[1] · Chang-Feng Dong[1] · Yi-Jun Li[1] · Xiao-Juan Xie[1] · Cheng Feng[1] · Lei Liu[2]

Received: 6 February 2020 / Accepted: 5 April 2020

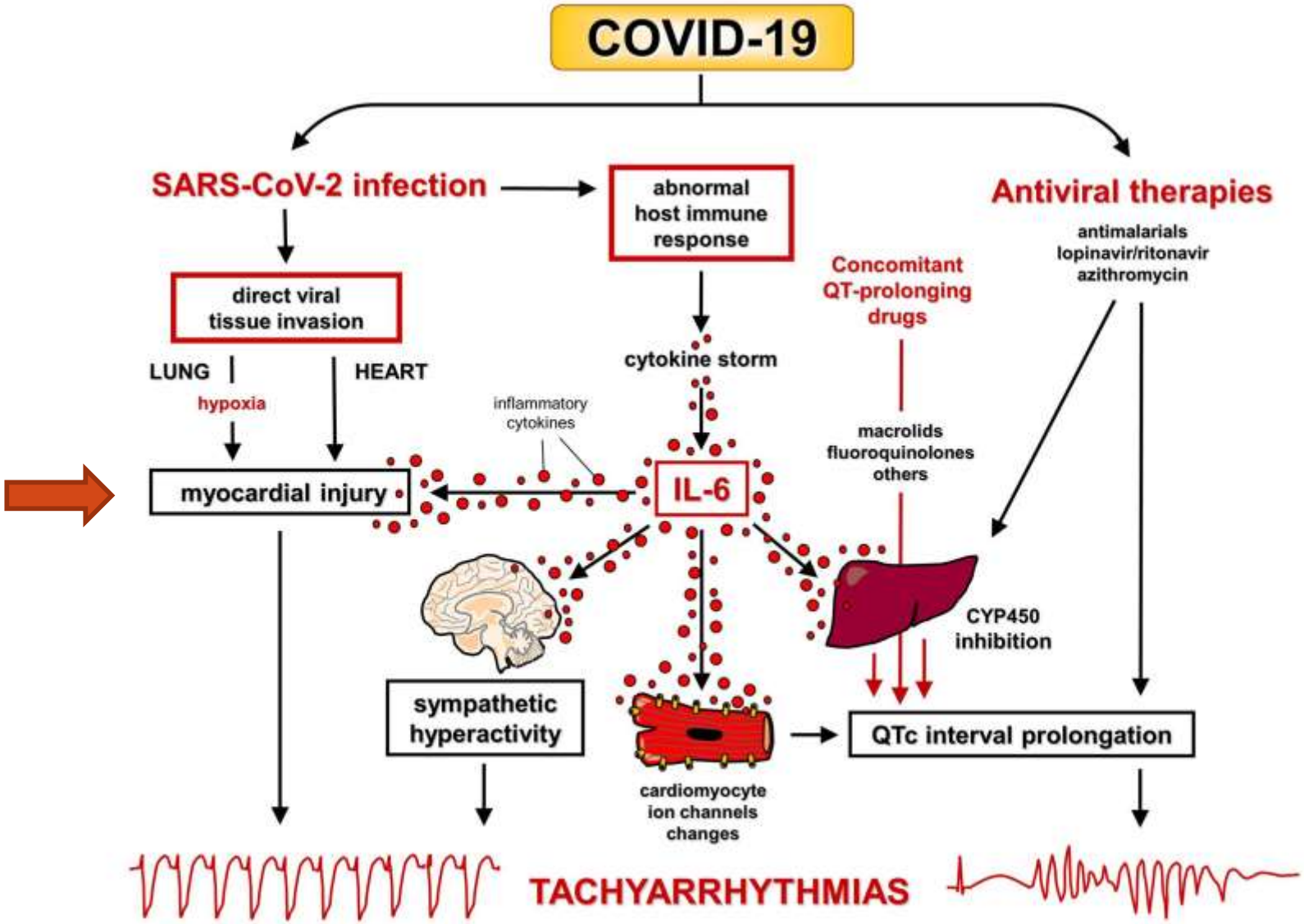
Abstract

Background Coronavirus disease 2019 (COVID-19) has been demonstrated to be the cause of pneumonia. Nevertheless, it has not been reported as the cause of acute myocarditis or fulminant myocarditis.

Case presentation A 63-year-old male was admitted with pneumonia and cardiac symptoms. He was genetically confirmed as having COVID-19 according to sputum testing on the day of admission. He also had elevated troponin I (Trop I) level (up to 11.37 g/L) and diffuse myocardial dyskinesia along with a decreased left ventricular ejection fraction (LVEF) on echocardiography. The highest level of interleukin-6 was 272.40 pg/ml. Bedside chest radiographs showed typical ground-glass changes indicative of viral pneumonia. Laboratory test results for viruses that cause myocarditis were all negative. The patient conformed to the diagnostic criteria of the Chinese expert consensus statement for fulminant myocarditis. After receiving antiviral therapy and mechanical life support, Trop I was reduced to 0.10 g/L, and interleukin-6 was reduced to 7.63 pg/mL. Moreover, the LVEF of the patient gradually recovered to 68%. The patient died of aggravation of secondary infection on the 33rd day of hospitalization.

Conclusion COVID-19 patients may develop severe cardiac complications such as myocarditis and heart failure. This is the first report of COVID-19 complicated with fulminant myocarditis. The mechanism of cardiac pathology caused by COVID-19 needs further study.

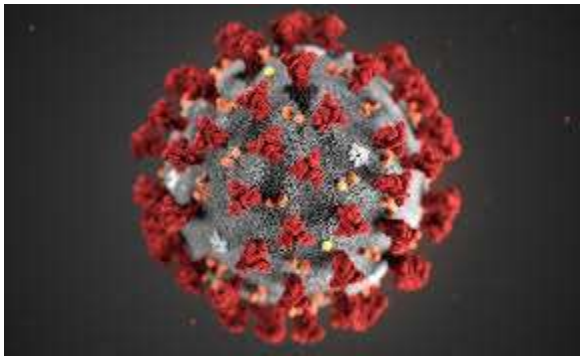
Manifestations cliniques



Manifestations cliniques

Coronavirus et thromboses?

TP bas
D-dimères élevées
Thrombopénie
Fibrinogène élevé



Formes modérées et sévères

Thromboses intravasculaires (veineuses et artérielles)

Lésions endothéliales
Ac antiphopholipides
Mimétisme de vascularite

Manifestations cliniques

Coronavirus et thromboses

Clinical Pathology of Critical Patient with Novel Coronavirus Pneumonia (COVID-19)

Weiren Luo *, Hong Yu, Jizhou Gou, Xiaoxing Li, Yan Sun, Jinxiu Li, Lei Liu

Abstract

Aim: Novel coronavirus pneumonia (COVID-19) have emerged as major global health threats since December, 2019. Up to now, the histopathology of critical patient with COVID-19 remains largely undisclosed. **Methods:** We here performed lung organ dissection, and described the pathological changes of one COVID-19 critical patient by HE staining, immunohistochemistry and special staining including Masson staining, PAS staining and silver methenamin staining. **Results:** The whole lung tissue displayed diffuse congestive appearance or partly haemorrhagic necrosis on gross examination. The haemorrhagic necrosis was prominently present in outer edge of the right lobe of the right lung. The cut surfaces of the lung displayed severe congestive and haemorrhagic changes. The main pathological lung changes showed bronchiolitis and alveolitis with proliferation, atrophy, desquamation and squamous metaplasia of epithelial cells. Massive pulmonary interstitial fibrosis, and partly hyaline degeneration, variable degrees of hemorrhagic pulmonary infarction. Small vessels hyperplasia, vessel wall thickening, lumen stenosis and occlusion. Focal monocytes, lymphocytes and plasma cells infiltrating into pulmonary interstitium. Alveolar congestion was prominent, and contained edema fluid, desquamated epithelial cells, and inflammatory cells. Atrophy, vacuolar degeneration, proliferation, desquamation and squamous metaplasia in alveolar epithelial cells. We can also found several multinucleate giant cells and intracytoplasmic viral inclusion bodies. Masson staining indicated massive pulmonary interstitial fibrosis. Immunohistochemistry results showed positive for immunity cells including CD3, CD20, CD79a, CD4, CD8, CD5, CD68 and CD38. **Conclusion:** We show clinical pathology of critical patient with COVID-19, which might provide a deep insight of the pathogenesis and the severity of this disease.

Manifestations cliniques

Coronavirus et thromboses

Aspect d’engelure aux extrémités

Formes cliniques

Formes cliniques

République Tunisienne
Ministère de la Santé

Les Guides de l'INEAS

Direction Qualité des Soins et Sécurité des patients

Guide Parcours du patient suspect ou atteint par le Covid-19

Consensus d'experts

Tableau 5: Classification des formes cliniques

Forme pauci-symptomatique	**Toux sèche légère, malaise, céphalées, douleurs musculaires. Sujets âgés et immuno-déficients : syndromes atypiques possibles**
Forme légère	Pneumonie sans signe de sévérité (toux, dyspnée légère, FR<30cpm, SpO2>92%)
Forme modérée	Dyspnée, FR >30 cpm ou SpO2 ≤ 92%
Forme sévère	détresse vitale, défaillance d'organe

Formes cliniques

VIEWPOINT

Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China

Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention

72 314 Cases (as of February 11, 2020)

- Confirmed cases: 44 672 (62%)
- Suspected cases: 16 186 (22%)
- Diagnosed cases: 10 567 (15%)
- Asymptomatic cases: 889 (1%)

Age distribution (N = 44 672)

- ≥80 years: 3% (1408 cases)
- 30-79 years: 87% (38 680 cases)
- 20-29 years: 8% (3619 cases)
- 10-19 years: 1% (549 cases)
- <10 years: 1% (416 cases)

Spectrum of disease (N = 44 415)

- Mild: 81% (36 160 cases)
- Severe: 14% (6168 cases)
- Critical: 5% (2087 cases)

Wu Z. JAMA. February, 24 2020.

Formes cliniques

- **CRITERES DE GRAVITE ???**

Haut Conseil de la Santé Publique

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
MINISTÈRE DES AFFAIRES SOCIALES DE LA SANTÉ ET DES DROITS DES FEMMES

Critères de gravité:

- Température > 40°C.
- Fréquence respiratoire supérieur à 24 cycles/min.
- SpO2 < 90% en air ambiant ou oxygénorequérance > 3L/mn*
- PaO2 < 70 mmHg sur gaz du sang artériel.
- PA systolique < 100 mmHg.
- Troubles de la vigilance.
- Lactates artériels > 2 mmol/L.
- Anomalies bilatérales à la radiographie ou au scanner thoracique.

Formes cliniques

- **CRITERES DE GRAVITE ???**

L'augmentation rapide des besoins en oxygène pour maintenir une saturation > 95% est un facteur de mauvais pronostic.

Facteurs de risque de formes graves

Table 1 Demographic, epidermiological characteristics, and underlying comorbidities of patients with confirmed 2019-nCoV infection

Variables	Total (*N* = 487)	Mild (*N* = 438)	Severe (*N* = 49)	*P* value
Age (years)	46 (19)	45 (19)	56 (17)	< 0.001
Sex				
Male	259 (53.2%)	223 (50.9%)	36 (73.5%)	
Female	228 (46.8%)	215 (49.1%)	13 (26.5%)	0.003
Occupation				
Agricultural worker	140 (28.7%)	122 (27.9%)	18 (36.7%)	
Self-employed	219 (45.0%)	203 (46.3%)	16 (32.7%)	
Employee	82 (16.8%)	79 (18.0%)	3 (6.1%)	
Retired	38 (7.8%)	26 (5.9%)	12 (24.5%)	
Student	8 (1.6%)	8 (1.8%)	0 (0%)	< 0.001
Smoking history				
Yes	40 (8.2%)	34 (7.8%)	6 (12.2%)	
No	434 (89.1%)	391 (89.3%)	43 (87.8%)	
Unknown	13 (2.7%)	13 (2.7%)	0 (0%)	0.331
Comorbidities				
Hypertension	99 (20.3%)	73 (16.7%)	26 (53.1%)	< 0.001
Diabetes	29 (6.0%)	22 (5.0%)	7 (14.3%)	0.009
Cardiovascular disease	11 (2.3%)	7 (1.6%)	4 (8.2%)	0.003
Malignancy	5 (1%)	3 (0.7%)	2 (4.1%)	0.025
Chronic liver diseases	22 (4.5%)	20 (4.6%)	2 (4.1%)	0.877
Chronic renal diseases	7 (1.4%)	5 (1.1%)	2 (4.1%)	0.101

Facteurs de risque de formes graves

Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study

Fei Zhou*, Ting Yu*, Ronghui Du*, Guohui Fan*, Ying Liu*, Zhibo Liu*, Jie Xiang*, Yeming Wang, Bin Song, Xiaoying Gu, Lulu Guan, Yuan Wei, Hui Li, Xudong Wu, Jiuyang Xu, Shengjin Tu, Yi Zhang, Hua Chen, Bin Cao

March, 9 2020

	Total (n=191)	Non-survivor (n=54)	Survivor (n=137)	p value
Demographics and clinical characteristics				
Age, years	56·0 (46·0–67·0)	69·0 (63·0–76·0)	52·0 (45·0–58·0)	<0·0001
Sex	..	..	..	0·15
Female	72 (38%)	16 (30%)	56 (41%)	..
Male	119 (62%)	38 (70%)	81 (59%)	..
Exposure history	73 (38%)	14 (26%)	59 (43%)	0·028
Current smoker	11 (6%)	5 (9%)	6 (4%)	0·21
Comorbidity	91 (48%)	36 (67%)	55 (40%)	0·0010
Hypertension	58 (30%)	26 (48%)	32 (23%)	0·0008
Diabetes	36 (19%)	17 (31%)	19 (14%)	0·0051
Coronary heart disease	15 (8%)	13 (24%)	2 (1%)	<0·0001
Chronic obstructive lung disease	6 (3%)	4 (7%)	2 (1%)	0·047
Carcinoma	2 (1%)	0	2 (1%)	0·37
Chronic kidney disease	2 (1%)	2 (4%)	0	0·024

Facteurs de risque de formes graves

HCSP (23/03/20)

- **Age** > 70 ans
- **Antécédents cardiovasculaires:** HTA compliquée, AVC, coronaropathie, chirurgie cardiaque, insuffisance cardiaque (NYHA III, IV)
- **Diabète** non équilibré ou présentant des complications
- **Pathologie chronique respiratoire** susceptible de décompenser lors d'une In virale
- **Insuffisance rénale** chronique dialysée
- **Cancer évolutif** sous traitement
- Facteurs de risques présumés:
  - ✓ **Immunodépression** congénitale ou acquise
  - ✓ **Cirrhose** stade B (Child-Pugh)
  - ✓ **Obésité** morbide (IMC > 40kg/m2)
  - ✓ **Splénectomie** ou **drépanocytose homozygote**
  - ✓ **Grossesse** au troisième trimestre

Facteurs de risque de formes graves

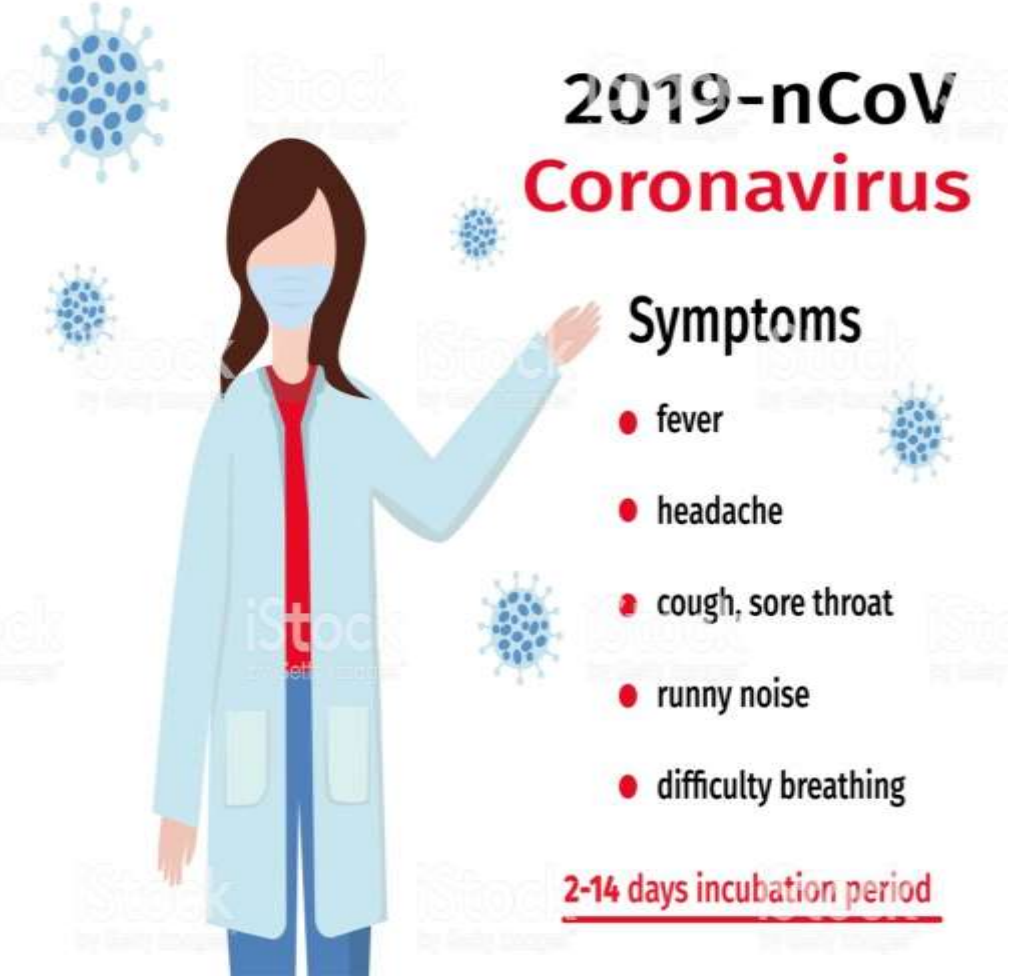
- **Sévérité de présentation clinique (hospitalisation USI)**
  - ✓ **HTA** RR: 2,03 IC95%[1,54-2,68]
  - ✓ **AVC/Coronaropathie** RR: 3,3 IC95%[2,03-5,36]
  - ✓ **Diabète** RR: 2.21 IC95%[0,88-5,57] **Non significatif**
- **Diabète:**
  - ✓ MERS-CoV: augmentation mortalité
  - ✓ SRAS-CoV1: augmentation des hospitalisations
  - ✓ SRAS-CoV-2: pas de données publiées; ne touche pas davantage les sujets porteurs d'un diabète que les autres
- **Néoplasie:**
  - ✓ Risque accru de forme grave

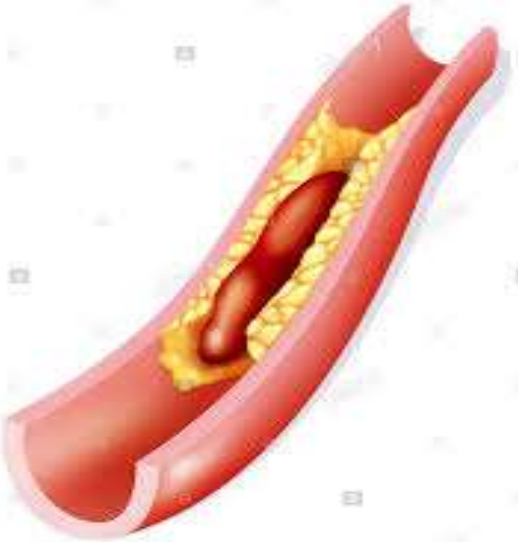
Facteurs de risque de formes graves

- **Obésité:**
  - ✓ Pas de données publiées à ce jour
- **Grossesse:**
  - ✓ Séries limitées, pas de complications accrues, pas de transmissions intra-utérine ou maternofœtale
- **Traitement par anti hypertenseur : sartans**
  - ✓ Possible risque accru de forme sévère

Conclusion

Conclusion


2019-nCoV
Coronavirus
Symptoms
fever
headache
cough, sore throat
runny noise
difficulty breathing
2-14 days incubation period




TACHYARRHYTHMIAS

Merci pour votre attention