26ème CONGRÈS DU CNCH

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GROUPE USIC

Cœur et inflammation à l'USIC

Focus: Cœur et COVID

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Focus:

Coeur et COVID 19

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Monde :

52 Millions de cas
1,3 Millions de morts

France :

1,8 Millions de cas
42 000 morts

PubMed

COVID = 73 000 publications

- L’infection à SARS CoV-2 apparait fin 2019 à Wuhan en Chine devant tableau de pneumopathie d’origine inconnue
- Elle est déclarée pandémie par l’OMS le 11 Mars 2020
- Les manifestations cliniques sont dominées par des symptômes respiratoires
- L’atteinte cardiaque est présente à double titre :
  - Effet délétère des comorbidités CV
  - Atteinte cardiaque par action directe du virus et/ou par ses réactions immunitaires

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JAMA Internal Medicine | Original Investigation

Risk Factors Associated With Acute Respiratory Distress Syndrome and Death in Patients With Coronavirus Disease 2019 Pneumonia in Wuhan, China

Table 3.

Clinical Characteristics and Initial Laboratory Indices Among Patients With and Without ARDS

Clinical characteristics	All patients				Patients with ARDS			
	Without ARDS, No. (%) (n = 117)	With ARDS, No. (%) (n = 84)	Difference (95% CI)[a]	P value[b]	Alive, No. (%) (n = 40)	Died, No. (%) (n = 44)	Difference (95% CI)[a]	P value
Age, median (IQR), y	48.0 (40.0 to 54.0)	58.5 (50.0 to 69.0)	12.0 (8.0 to 16.0)	<.001	50.0 (4[illegible] to 56.8)	68.5 (59.3 to 75.0)	18.0 (13.0 to 23.0)	<.001
Highest patient temperature, median (IQR), °C	38.6[illegible]	39.0 (38.5[illegible])	0.3 (0.0 to 0.5)	.004	38.[illegible] (38.5 to 39.7)	38.9 (38.0 to 39.2)	−0.3 (−0.6 to 0.0)	.05
≥39 (high fever)	36 (36.4)	41 (57.7)	21.3 (5.3 to 37.5)	.007	27 (73.0)	14 (41.2)	−31.8 (−56.5 to −7.1)	.007
<39	63 (63.6)	30 (42.3)			10 (27.0)	20 (58.8)		
Gender								
Male	68 (58.1)	60 (71.4)	13.3 (−0.9 to 2[illegible])	.05	31 (77.5)	29 (65.9)	−11.6 (−33.0 to 9.9)	.24
Female	49 (41.9)	24 (28.6)			9 (22.5)	15 (34.1)		
Initial symptoms								
Fever	110 (94.0)	78 (92.9)	[illegible].2 to 6.8)	.74	39 (97.5)	39 (88.6)	−8.9 (−21.8 to 4.1)	.25
Cough	95 (81.2)	68 (81.0)	[illegible] (−11.5 to 11.0)	.97	35 (87.5)	33 (75.0)	−12.5 (−31.3 to 6.3)	.15
IMV with ECMO	0	1 (1.2)	1.2 (−2.2 to 4.5)		0	1 (2.3)	2.3 (−4.4 to 8.9)	
Methylprednisolone	12 (10.3)	50 (59.5)	49.3 (36.4 to 62.1)	<.001	27 (67.5)			
Antibiotic therapy	113 (96.6)	83 (98.8)	2.2 (−2.8 to 7.3)	.59	40 (100.0)			
Antiviral therapy	106 (90.6)	64 (76.2)	−14.4 (−26.0 to −2.9)	.005	39 (97.5)			

Comorbidities

Hypertension	16 (13.7)	23 (27.4)
Diabetes	6 (5.1)	16 (19.0)
Cardiac disease	3 (2.6)	5 (6.0)

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Clinical Characteristics of Coronavirus Disease 2019 in China

Table 1. Clinical Characteristics of the Study Patients, According to Disease Severity and the Presence or Absence of the Primary Composite End Point.*

Characteristic	All Patients (N = 1099)	Disease Severity		Presence of Primary Composite End Point†	
		Nonsevere (N = 926)	Severe (N = 173)	Yes (N = 67)	No (N = 1032)
Age					
Median (IQR) — yr	47.0 (35.0–58.0)	45.0 (34.0–57.0)	52.0 (40.0–65.0)	63.0 (53.0–71.0)	46.0 (35.0–57.0)
Distribution — no./total no. (%)					
0–14 yr	9/1011 (0.9)	8/848 (0.9)	1/163 (0.6)	0	9/946 (1.0)
15–49 yr	557/1011 (55.1)	490/848 (57.8)	67/163 (41.1)	12/65 (18.5)	545/946 (57.6)
Symptoms — no. (%)					
Conjunctival congestion	9 (0.8)	5 (0.5)	4 (2.3)	0	9 (0.9)
Nasal congestion	53 (4.8)	47 (5.1)	6 (3.5)	2 (3.0)	51 (4.9)
Headache	150 (13.6)	124 (13.4)	26 (15.0)	8 (11.9)	142 (13.8)
Cough	745 (67.8)	623 (67.3)	122 (70.5)	46 (68.7)	699 (67.7)
Sore throat	153 (13.9)	130 (14.0)	23 (13.3)	6 (9.0)	147 (14.2)
Sputum production	370 (33.7)	309 (33.4)	61 (35.3)	20 (29.9)	350 (33.9)
Fatigue	419 (38.1)	350 (37.8)	69 (39.9)	22 (32.8)	397 (38.5)
Hemoptysis	10 (0.9)	6 (0.6)	4 (2.3)	2 (3.0)	8 (0.8)
Shortness of breath	205 (18.7)	140 (15.1)	65 (37.6)	36 (53.7)	169 (16.4)
Nausea or vomiting	55 (5.0)	43 (4.6)	12 (6.9)	3 (4.5)	52 (5.0)
Diarrhea	42 (3.8)	32 (3.5)	10 (5.8)	4 (6.0)	38 (3.7)
Myalgia or arthralgia	164 (14.9)	134 (14.5)	30 (17.3)	6 (9.0)	158 (15.3)
Chills	126 (11.5)	100 (10.8)	26 (15.0)	8 (11.9)	118 (11.4)
Signs of infection — no. (%)					
Throat congestion	19 (1.7)	17 (1.8)	2 (1.2)	0	19 (1.8)
Tonsil swelling	23 (2.1)	17 (1.8)	6 (3.5)	1 (1.5)	22 (2.1)
Enlargement of lymph nodes	2 (0.2)	1 (0.1)	1 (0.6)	1 (1.5)	1 (0.1)
Rash	2 (0.2)	0	2 (1.2)	0	2 (0.2)
Coexisting disorder — no. (%)					
Any	261 (23.7)	194 (21.0)	67 (38.7)		
Chronic obstructive pulmonary disease	12 (1.1)	6 (0.6)	6 (3.5)		
Diabetes	81 (7.4)	53 (5.7)	28 (16.2)		
Hypertension	165 (15.0)	124 (13.4)	41 (23.7)		
Coronary heart disease	27 (2.5)	17 (1.8)	10 (5.8)		

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

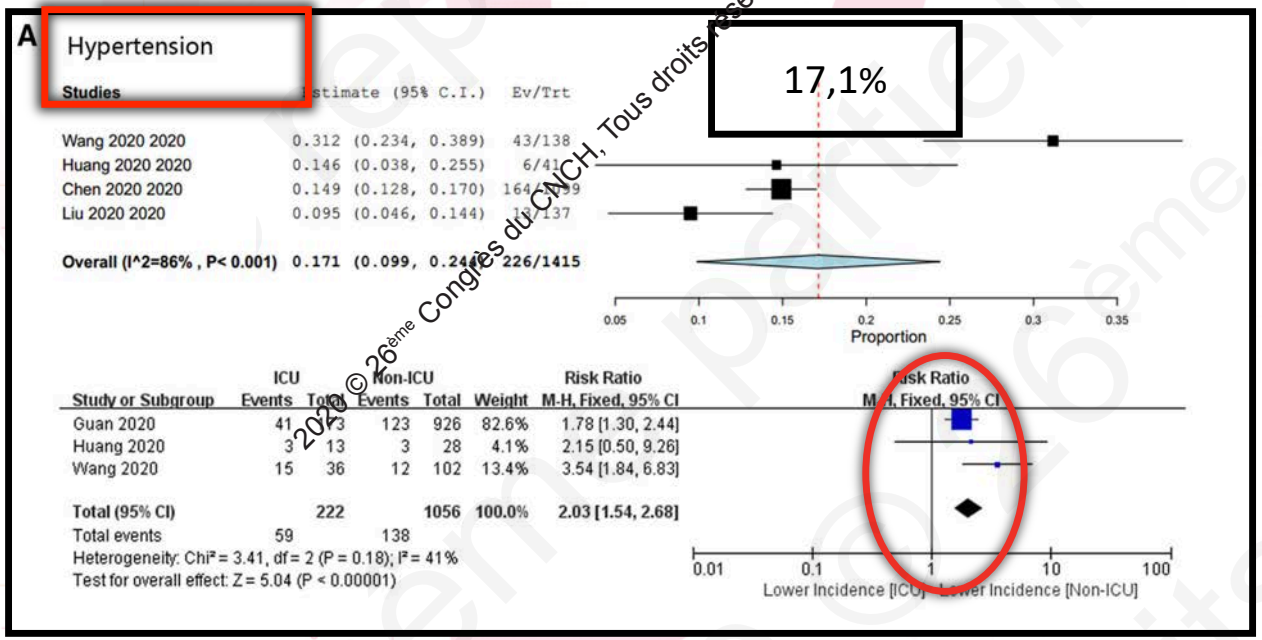
Risk factors associated with in-hospital death

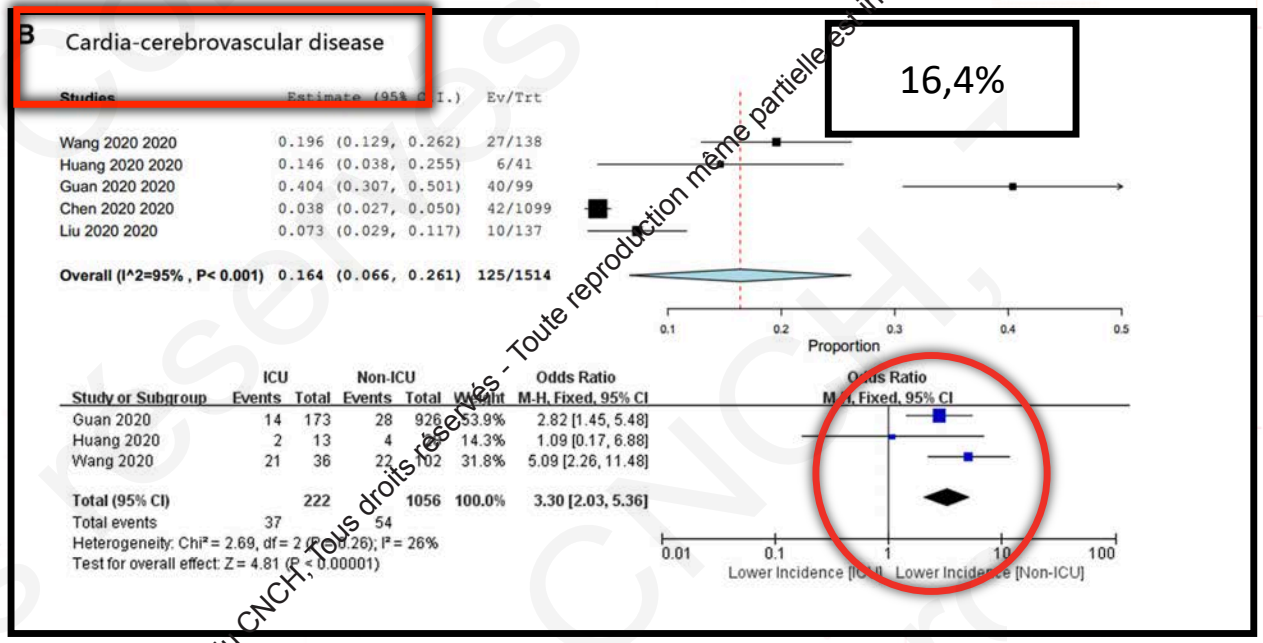
	Univariable OR (95% CI)	p value	Multivariable OR (95% CI)	p value
Demographics and clinical characteristics				
Age, years*	1·14 (1·09–1·18)	<0·0001	1·10 (1·03–1·17)	0·0043
Female sex (*vs* male)	0·61 (0·31–1·20)	0·15	..	..
Current smoker (*vs* non-smoker)	2·23 (0·65–7·63)	0·20	..	..
Comorbidity present (*vs* not present)				
Chronic obstructive lung disease	5·40 (0·96–30·40)	0·056	..	..
Coronary heart disease	21·40 (4·64–98·76)	<0·0001	2·14 (0·26–17·29)	0·48
Diabetes	2·85 (1·35–6·05)	0·0062	..	..
Hypertension	3·05 (1·57–5·92)	0·0010	..	..
Respiratory rate, breaths per min				
≤24	1 (ref)	..	..	..
>24	8·89 (4·34–18·19)	<0·0001	..	..
SOFA score	6·14 (3·48–10·85)	<0·0001	5·65 (2·61–12·23)	<0·0001
qSOFA score	12·00 (5·06–28·43)	<0·0001	..	..

Zhou F.,Lancet 2020; 395

Prevalence and impact of cardiovascular metabolic diseases on COVID-19 in China

Bo Li[1] · Jing Yang[1,2] · Faming Zhao[3] · Lili Zhi[4] · Xiqian Wang[1] · Lin Liu[1] · Zhaohui Bi[1] · Yunhe Zhao[1]





ESC European Society of Cardiology
European Heart Journal (2020) 41, 1821–1829
doi:10.1093/eurheartj/ehaa388

FASTTRACK CLINICAL RESEARCH
Prevention and epidemiology

Characteristics and outcomes of patients hospitalized for COVID-19 and cardiac disease in Northern Italy

Table 3 In-hospital management and outcomes of the study population stratified by concomitant cardiac disease

Variable	Total (*N* = 99)	Cardiac (*N* = 53)	Non-cardiac (*N* = 46)	*P*-value
Changes in ongoing treatment				
ACE/ARB/ARNI interruption, *n* (%)*	23 (77)	21 (75)	2 (100)	<0.001
Needed ventilatory support				
Oxygen support with FiO_2 <50%, *n* (%)	54 (57.4)	31 (58.5)	23 (56.1)	0.82
Oxygen support with FiO_2 ≥50%, *n* (%)	47 (50)	29 (54.7)	18 (43.7)	0.3
Non-invasive ventilation, *n* (%)	18 (19.1)	10 (18.9)	8 (19.5)	0.94
Intubation, *n* (%)	2 (2)	2 (3.8)	0 (0)	0.19
Outcomes				
Intensive care unit admission, *n* (%)	12 (12)	10 (19)	0 (0)	<0.001
Hospital length of stay, days	11.4 ± 6.5	11.8 ± 8.3	10.8 ± 3.4	0.48
ARDS, *n* (%)	19 (19)	12 (23)	7 (15)	0.35
Venous thrombo-embolism, *n* (%)	12 (12)	9 (17)	3 (6)	0.11
Arterial thrombo-embolism, *n* (%)	3 (3)	3 (6)	0 (0)	0.1
Septic shock/sepsis, *n* (%)	6 (6)	6 (11)	0 (0)	0.019
Death, *n* (%)	26 (26)	19 (36)	7 (15)	0.02

ITALIE

JAMA | Original Investigation

Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area

Safiya Richardson, MD, MPH; Jamie S. Hirsch, MD, MA, MSB; Mangala Narasimhan, DO; James M. Crawford, MD, PhD; Thomas McGinn, MD, MPH; Karina W. Davidson, PhD, MASc; and the Northwell COVID-19 Research Consortium

JAMA. 2020;323(20):2052-2059.

Table 1. Baseline Characteristics of Patients Hospitalized With COVID-19

	No. (%)
Demographic information	
Total No.	5700
Age, median (IQR) [range], y	63 (52-75) [0-107]
Sex	
Female	2263 (39.7)
Male	3437 (60.3)
Comorbidities	
Total No.	5700
Cancer	320 (6)
Cardiovascular disease	
Hypertension	3026 (56.6)
Coronary artery disease	595 (11.1)
Congestive heart failure	371 (6.9)

USA

Clinical Characteristics and In-Hospital Mortality for COVID-19 Across The Globe

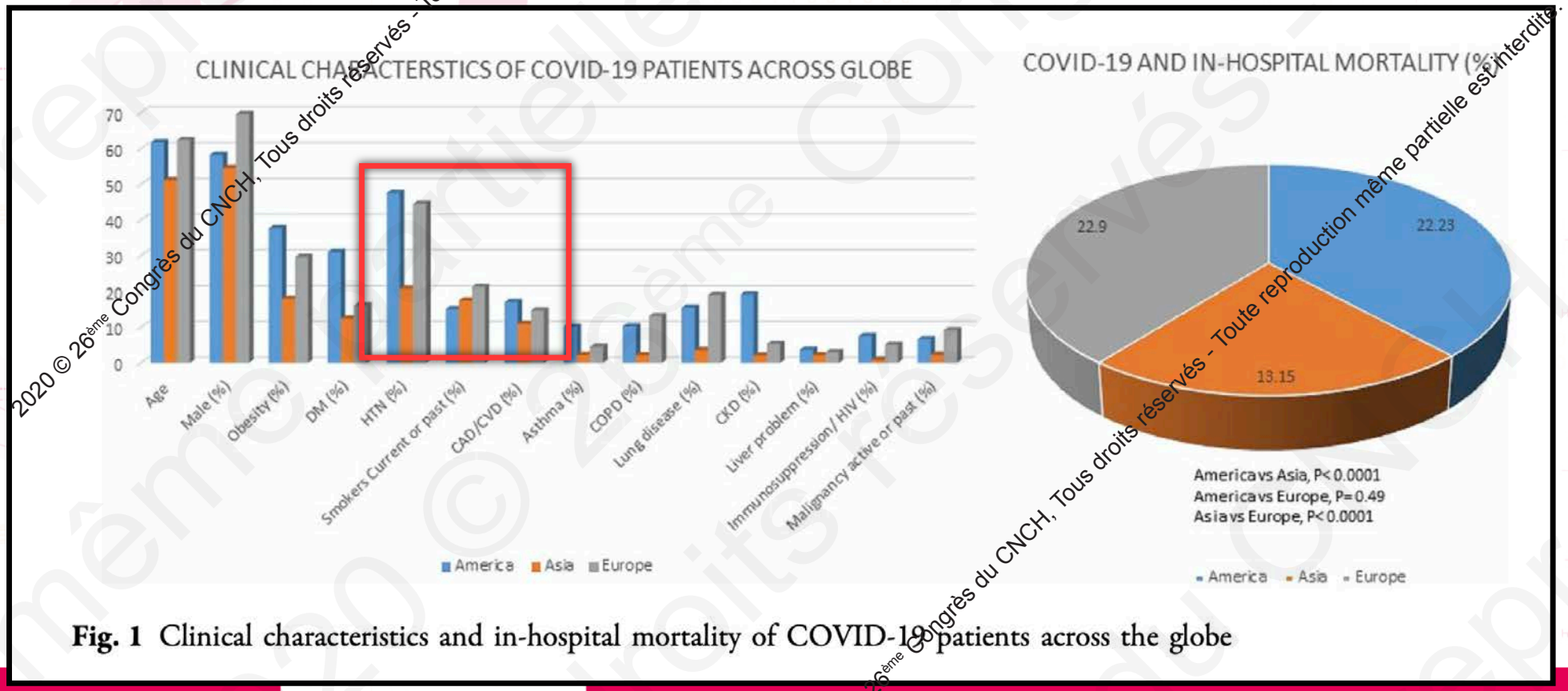


Fig. 1 Clinical characteristics and in-hospital mortality of COVID-19 patients across the globe

Focus COVID et cardiologie

- HTA - SRAA
- Troubles de la coagulation - Maladie Thromboembolique
- Lésion myocardique aigue: Infarctus et Myocardite
- Arythmies

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HTA
SRAA
PHYSIOPATHOLOGIE

La gravité de COVID chez les hypertendus est-elle liée aux traitements inhibant le SRAA ?

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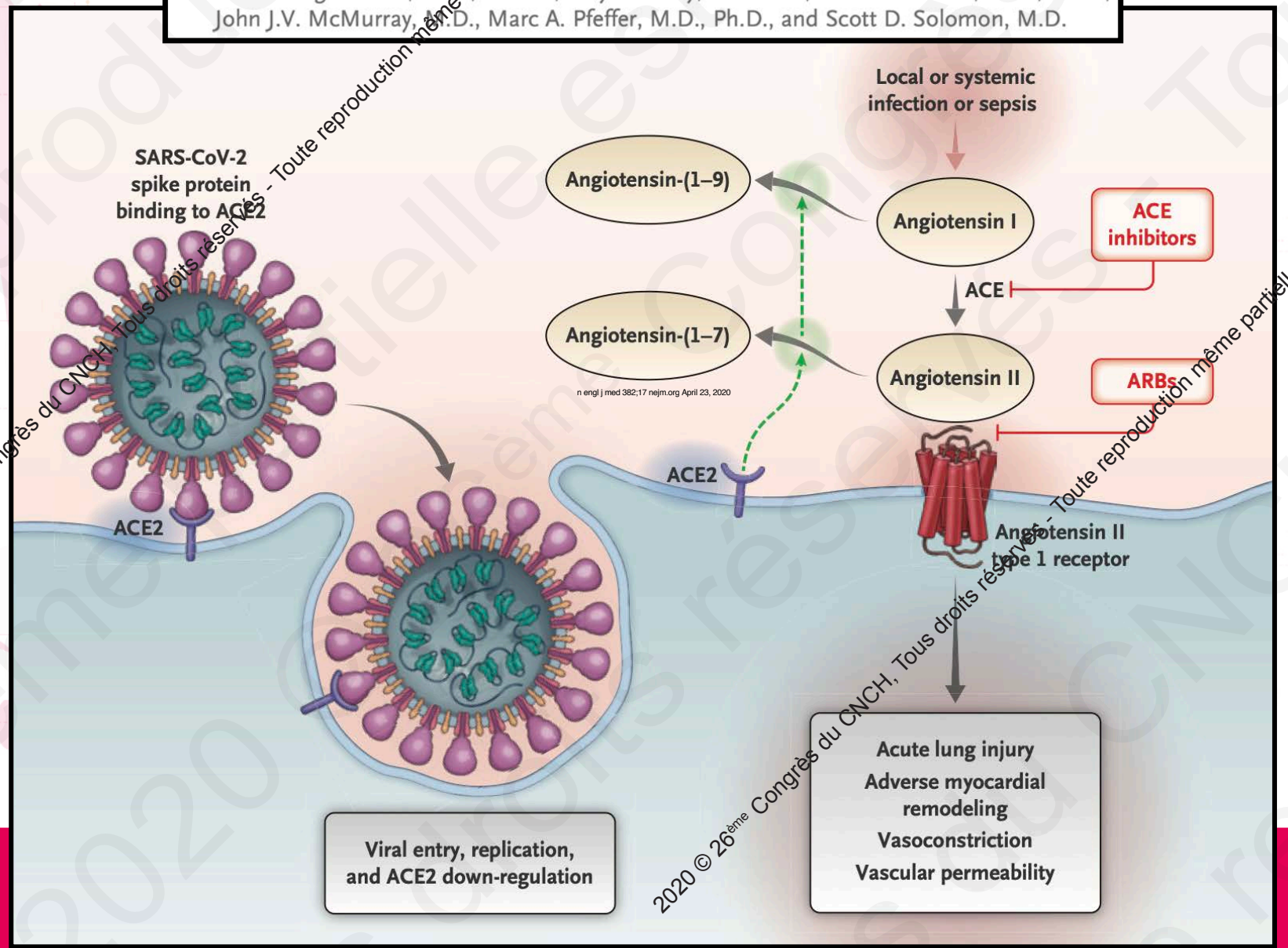
Renin–Angiotensin–Aldosterone System Inhibitors in Patients with Covid-19

Muthiah Vaduganathan, M.D., M.P.H., Orly Vardeny, Pharm.D., Thomas Michel, M.D., Ph.D., John J.V. McMurray, M.D., Marc A. Pfeffer, M.D., Ph.D., and Scott D. Solomon, M.D.



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Vaduganathan, NEJM 2020

ESC European Society of Cardiology
European Heart Journal (2020) 41, 2058–2066
doi:10.1093/eurheartj/ehaa409

FASTTRACK CLINICAL RESEARCH
Hypertension

Association of hypertension and antihypertensive treatment with COVID-19 mortality: a retrospective observational study

Table 2 Comparison of mortality between cohorts

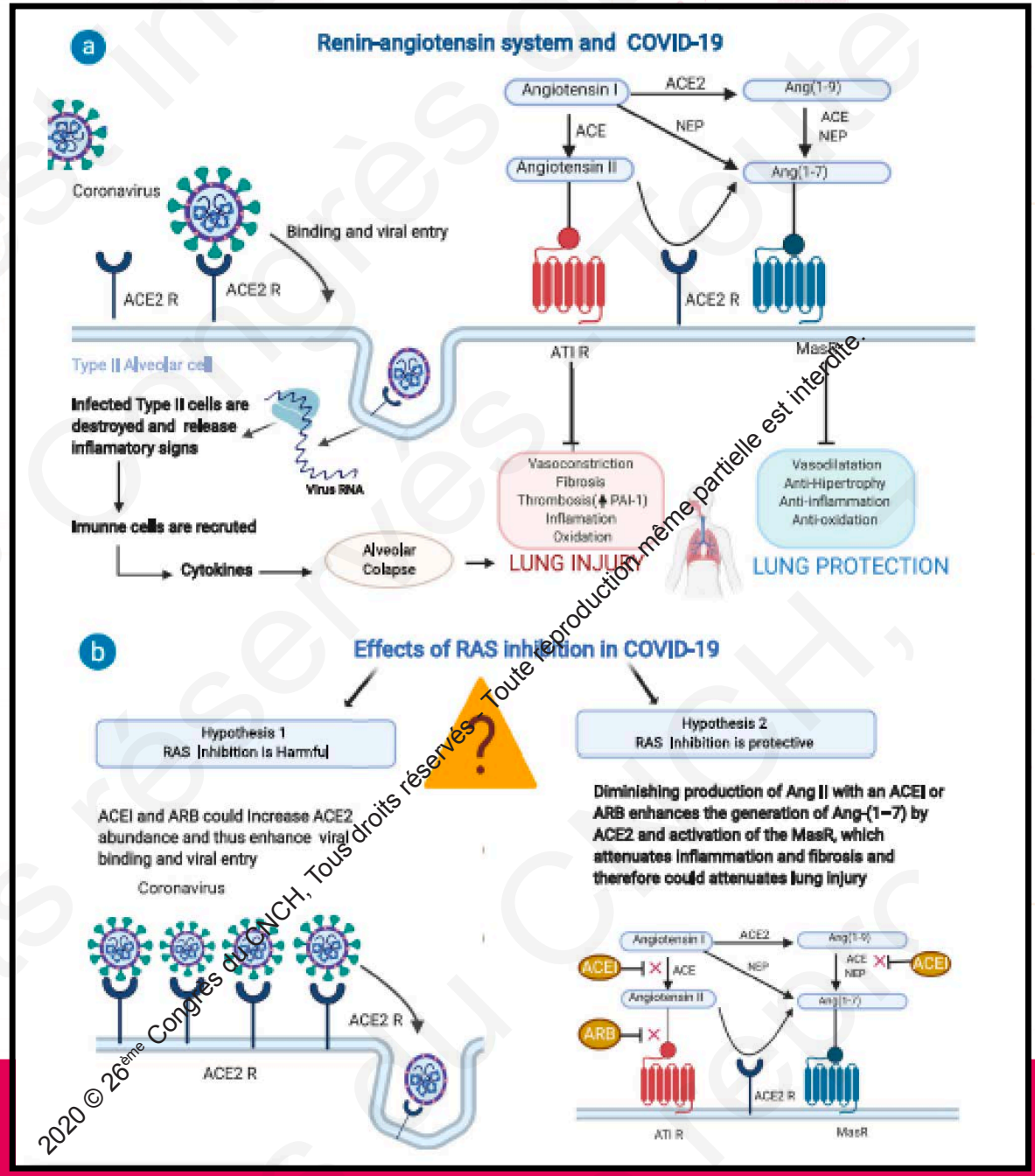
Hypertension	No history of hypertension		HR (95% CI)	*P*-value
34/850 (4.0%)	22/2027 (1.1%)	Unadjusted	3.75 (2.19–6.41)	<0.001
		Adjusted	2.06 (1.10–3.83)	0.023
		Propensity score adjusted	3.45 (1.39–8.55)	0.008
No antihypertensive treatment	Antihypertensive treatment		HR (95% CI)	*P*-value
11/140 (7.9%)	23/710 (3.2%)	Unadjusted	2.52 (1.23–5.17)	0.012
		Adjusted	2.24 (1.05–4.76)	0.037
		Propensity score adjusted	2.43 (1.01–5.38)	0.028
RAAS inhibitors	Non-RAAS inhibitors		HR (95% CI)	*P*-value
4/183 (2.2%)	19/527 (3.6%)	Unadjusted	0.60 (0.20–1.76)	0.354
		Adjusted	0.85 (0.28–2.58)	0.774
		Propensity score adjusted	0.93 (0.31–2.84)	0.901

Continuing versus suspending angiotensin-converting enzyme inhibitors and angiotensin receptor blockers: Impact on adverse outcomes in hospitalized patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)–The BRACE CORONA Trial

Renato D. Lopes, MD, PhD,[a,b,c,d] Ariane Vieira Scarlatelli Macedo, MD, MSc,[a,d,e]

N=659

Les IEC/sartans sont-ils délétères ou bénéfiques en cas d'infection COVID-19 ?

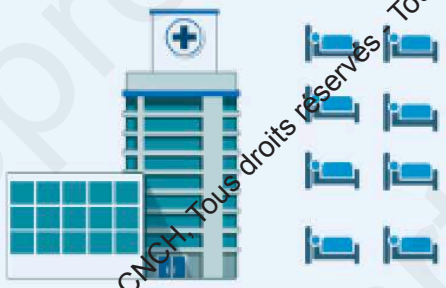


DESIGN OF BRACE CORONA TRIAL

Continuing versus Suspending angiotensin-converting enzyme inhibitors and angiotensin receptor blockers and its impact on adverse outcomes in hospitalized patients with coronavirus infection (SARS-CoV2)

STUDY POPULATION

National registry on suspected and confirmed cases of COVID-19



Confirmed diagnosis of COVID-19

and

Chronic use of renin-angiotensin system blockers (ACEI/ARB)

500 participants at 34 sites in Brazil

1:1 RANDOMIZATION

Continue to use ACEI/ARB treatment

Temporarily descontinue ACEI/ARB treatment for 30 days

PRIMARY OUTCOME

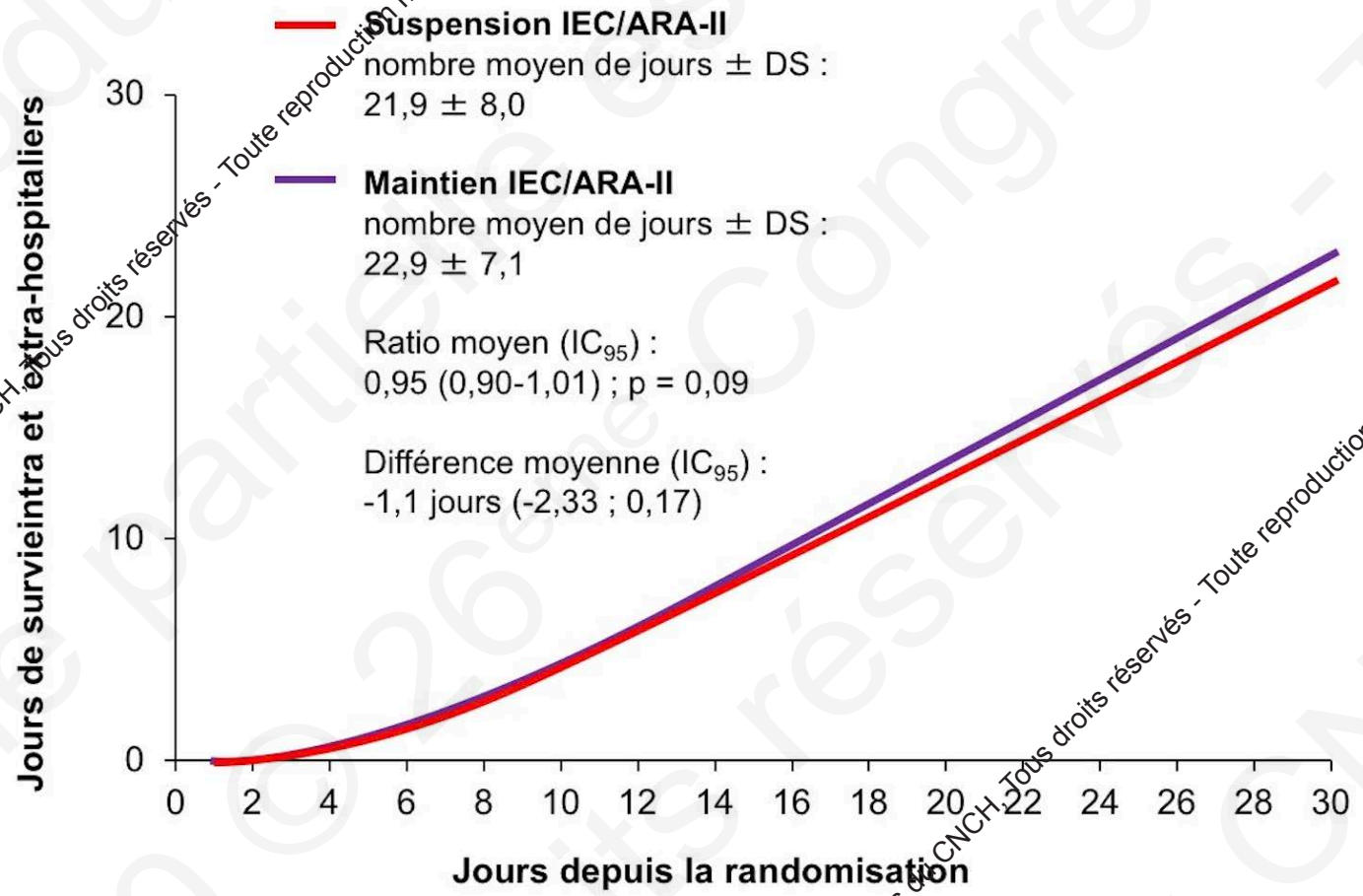
Median days alive and out of the hospital at 30-days

SECONDARY OUTCOMES

- Progression of COVID-19 disease
- All cause mortality
- Cardiovascular death
- Acute myocardial infarction
- New or worsening heart failure
- Stroke, transient ischemic attack
- Myocarditis, pericarditis
- Arrhythmias that need treatment
- Thromboembolic phenomena
- Respiratory failure, renal failure
- Hemodynamic decompensation
- Sepsis, hypertensive crisis
- Level of troponin, NT-ProBNP, BNP, and D-dimer

Design of the BRACE CORONA trial.

Critère principal - Jours de survie au cours des 30 jours intra- et extra-hospitaliers



D'après la présentation de Renato Lopes « *Renato Lopes « BRACE CORONA: Continuing vs. Suspending ACE Inhibitors and ARBs in COVID-19* » durant l'ESC 2020

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Position Statement of the ESC Council on Hypertension on ACE-Inhibitors and Angiotensin Receptor Blockers

13 Mar 2020

Based on initial reports from China, and subsequent evidence that arterial hypertension may be associated with increased risk of mortality in hospitalized COVID-19 infected subjects, hypotheses have been put forward to suggest a potential adverse effects of angiotensin converting enzyme inhibitors (ACE-i) or Angiotensin Receptor Blockers (ARBs). It has been suggested, especially on social media sites, that these commonly used drugs may increase both the risk of infection and the severity of SARS-CoV2. The concern arises from the observation that, similar to the coronavirus causing SARS, the COVID-19 virus binds to a specific enzyme called ACE2 to infect cells, and ACE2 levels are increased following treatment with ACE-i and ARBs.

The Council on Hypertension strongly recommend that physicians and patients should continue treatment with their usual anti-hypertensive therapy because there is no clinical or scientific evidence to suggest that treatment with ACEi or ARBs should be discontinued because of the Covid-19 infection.

but to date there is no data in humans.

The Council on Hypertension of the European Society of Cardiology wish to highlight **the lack of any evidence** supporting harmful effect of ACE-I and ARB in the context of the pandemic COVID-19 outbreak.

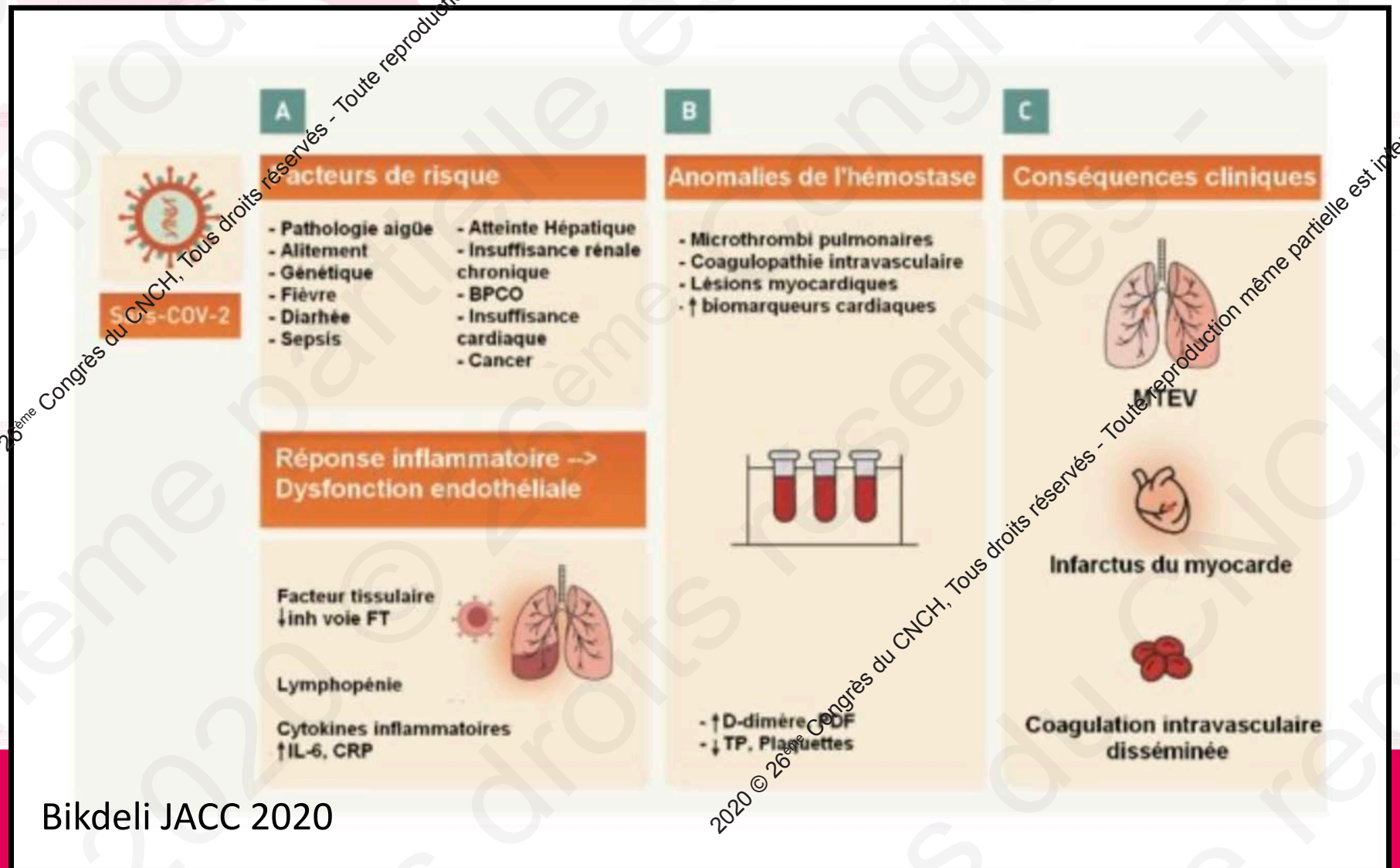
The Council on Hypertension **strongly recommend that physicians and patients should continue treatment with their usual anti-hypertensive therapy because there is no clinical or scientific evidence to suggest that treatment with ACEi or ARBs should be discontinued because of the Covid-19 infection.**

Prof. Giovanni de Simone,

Chair, ESC Council on Hypertension

On behalf of the Nucleus Members

Complications thrombotiques et COVID



Bikdeli JACC 2020

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Abnormal coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia

Ning Tang[1] | Dengju Li[2] | Xiong Wang[1] | Ziyong Sun[1]

Parameters	Normal range	Total (n = 183)	Survivors (n = 162)	Non-survivors (n = 21)	*P* values
Age (years)		54.1 ± 16.2	52.4 ± 15.6	64.0 ± 20.7	<.001
Sex (male/female)		98/85	82/80	16/5	.035
With underlying diseases		75 (41.0%)	63 (38.9%)	12 (57.1%)	.156
On admission					
PT (sec)	11.5-14.5	13.7 (13.1-14.6)	13.6 (13.0-14.3)	15.5 (14.4-16.3)	<.001
APTT (sec)	29.0-42.0	41.6 (36.9-44.5)	41.2 (36.9-44.0)	44.8 (40.2-51.0)	.096
Fibrinogen (g/L)	2.0-4.0	4.55 (3.66-5.17)	4.51 (3.65-5.09)	5.16 (3.74-5.69)	.149
D-dimer (μg/mL)	<0.50	0.66 (0.38-1.50)	0.61 (0.35-1.29)	2.12 (0.77-5.27)	<.001
FDP (μg/mL)	<5.0	4.0 (4.0-4.9)	4.0 (4.0-4.3)	7.6 (4.0-23.4)	<.001
AT (%)	80-120	91 (83-97)	91 (84-97)	84 (78-90)	.096

Abbreviations: APTT, activated partial thromboplastin time; AT, antithrombin activity; FDP, fibrin degradation product; NCP, novel coronavirus pneumonia; PT, prothrombin time (PT).

Tang. J Thromb Haemost.2020;18:844–84

Acute Pulmonary Embolism Associated with COVID-19 Pneumonia Detected by Pulmonary CT Angiography

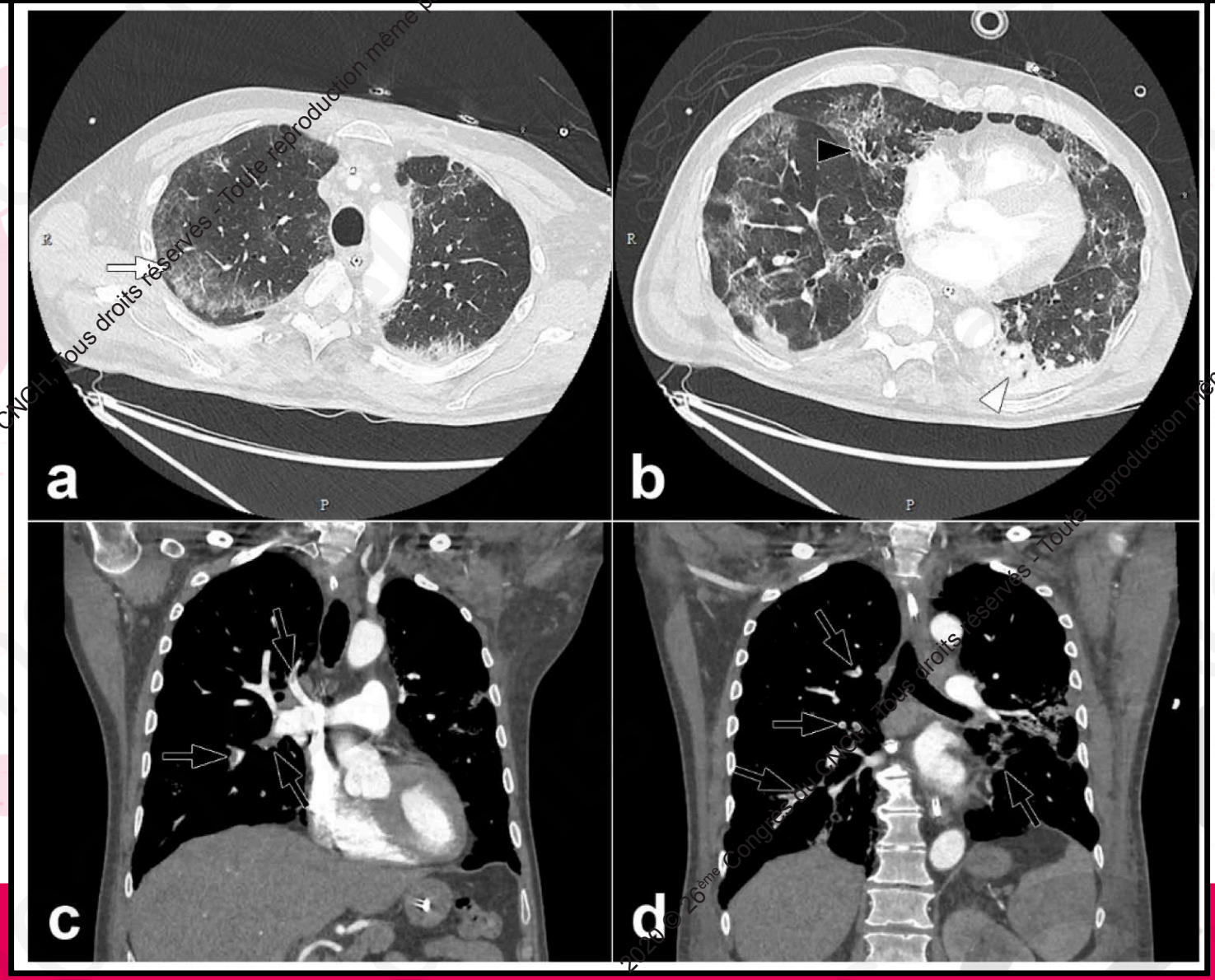
Franck Grillet, MD, Julien Behr, MD, Paul Calame, MD, Sébastien Aubry, MD, PhD, Eric Delabrousse, MD, PhD

Table. Patient Characteristics

	Total (n, % or SD)	Pulmonary embolus on chest CT (n, % or SD)	No Pulmonary embolus on chest CT (n, % or SD)	p value
	n= 100	n=23	n=77	
Age (years)	66 ± 13	67 ± 11	66 ± 13	.80
Male	70 (70)	21 (91)	49 (64)	.02
Comorbidities				
Cardiovascular disease	39 (39)	10 (43)	29 (38)	.81
Chronic respiratory insufficiency	15 (15)	4 (17)	10 (13)	.76
Diabetes, type 2	20 (20)	6 (23)	14 (18)	.55
Malignancy	20 (20)	3 (23)	16 (21)	.39
Care status				
Conventional care	61 (61)	6 (26)	55 (71)	
Critical care	39 (39)	17 (74)	22 (29)	<.001
Invasive mechanical ventilation	34 (34)	15 (65)	19 (25)	<.001
Delay from onset of symptoms to CT scan (days)	9 ± 5	12 ± 6	8 ± 5	<.001

Grillet et al., Radiology, in Press

Acute Pulmonary Embolism Associated with COVID-19 Pneumonia Detected by Pulmonary CT Angiography



Prophylaxie et traitement de la MTEV en cas d'infection COVID-19 hospitalisé

	Pas d'oxygénothérapie	Oxygénothérapie	Oxygénothérapie nasale à haut débit ou ventilation artificielle
IMC <30 kg/m²	HBPM dose prophylactique standard ou fondaparinux (*par ex : enoxaparine 4000 UI/24h SC; enoxaparine 2000 UI/24h SC si Clcr entre 15 et 30 ml/min; tinzaparine 3500 UI/24h SC si Clcr >20 ml/min; fondaparinux 2,5 mg/24h si Clcr >50 ml/min*)		
IMC ≥30 kg/m² sans FDR*	enoxaparine 4000 UI/12h SC enoxaparine 6000 UI/12h SC si poids >120 kg HNF: 200 UI/kg/24h, si Clcr < 30 ml/min		
IMC ≥30kg/m² avec FDR*			
Thromboses itératives de cathéter ou de filtre d'EER Syndrome inflammatoire marqué (par ex: fibrinogène >8 g/L) Hypercoagulabilité (par ex: D-dimères >3 µg/ml) ECMO		HBPM à dose curative par ex. enoxaparine 100 UI/kg/12h SC (poids réel), sans dépasser 10 000 UI/12h. HNF 500 UI/kg/24h si Clcr <30 ml/min Réévaluer la dose en cas de défaillance multiviscérale ou de coagulopathie de consommation.	
Traitement anticoagulant au long cours			

Risque intermédiaire | Risque élevé | Risque très élevé

NB: le risque faible n'est pas représenté

**Facteurs De Risque (FDR) thromboemboliques : cancer a*

Clcr : Clairance de la créatinine; HBPM : héparine de bas poids m

Atteinte myocardique

Acute Myocardial Injury

Coronaropathie et/ou Myocardite

Cardiac troponin I in patients with coronavirus disease 2019 (COVID-19): Evidence from a meta-analysis

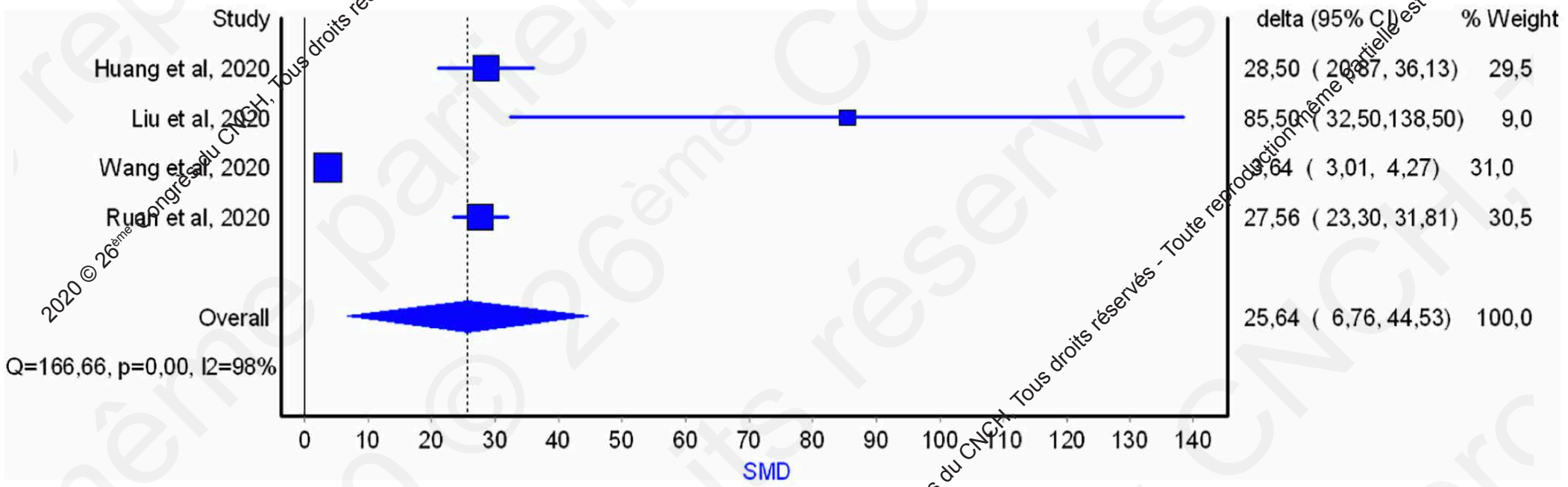
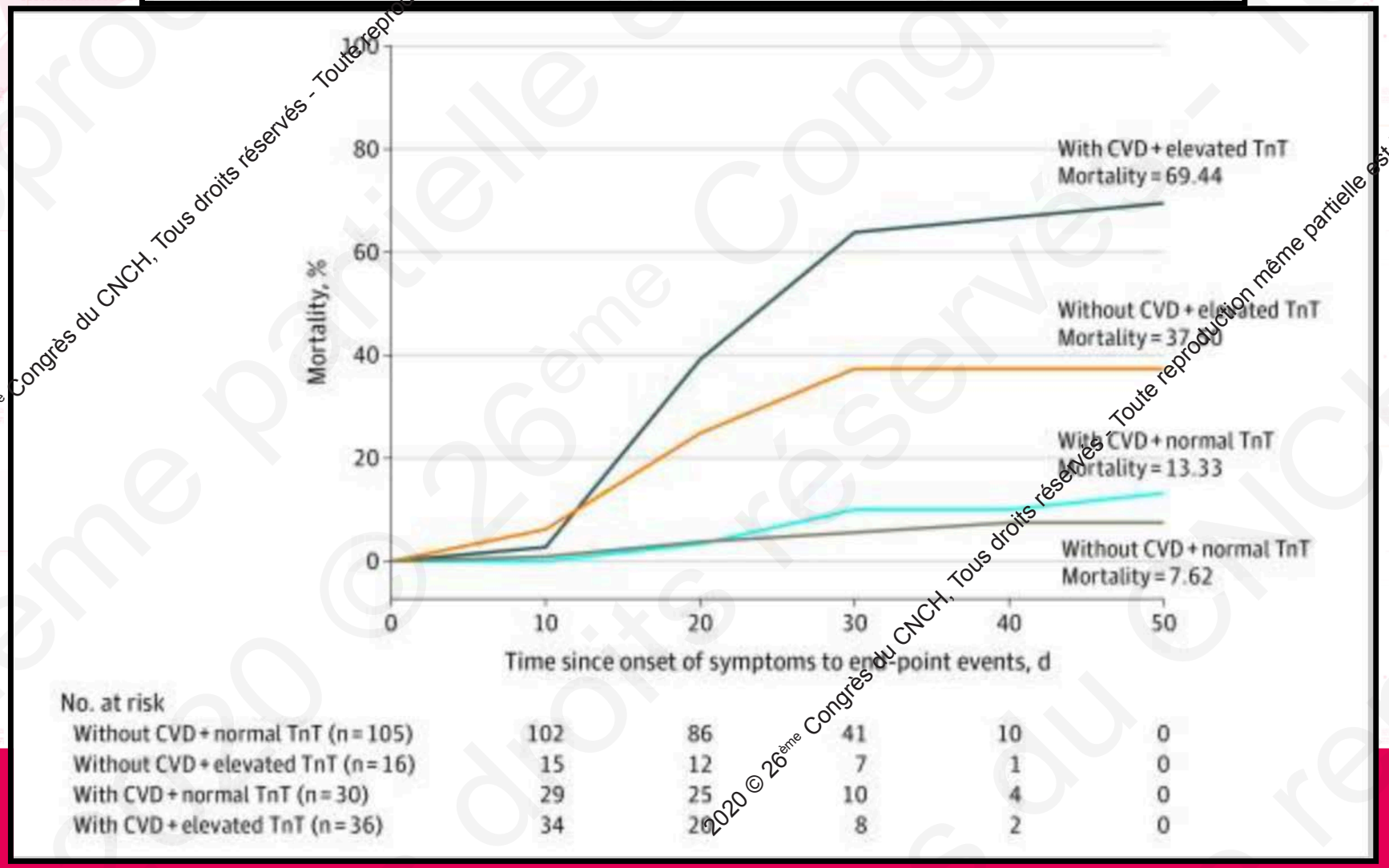


Fig 1. Standardized mean difference (SMD) and 95% confidence interval (95% CI) of cardiac troponin I (cTnI) values in coronavirus disease 2019 (COVID-19) patients with or without severe disease.

Cardiovascular Implications of Fatal Outcomes of Patients With Coronavirus Disease 2019 (COVID-19)

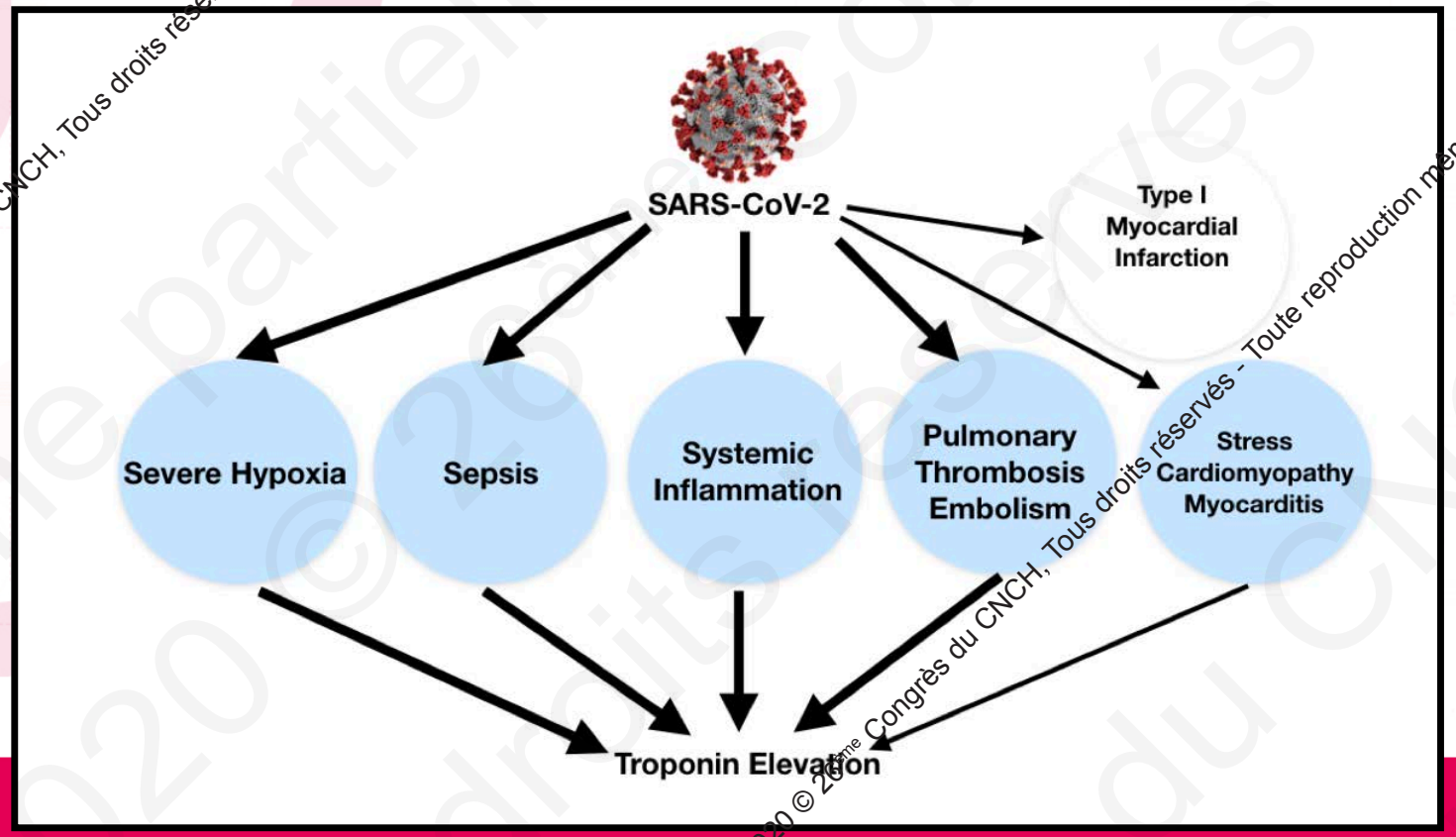
Tao Guo, MD, Yongzhen Fan, MD, [...], and Zhibing Lu, MD



JAMA Cardiol. 2020.

COVID-19 pandemic and troponin: indirect myocardial injury, myocardial inflammation or myocarditis?

Massimo Imazio [1,2] Karin Klingel,[3] Ingrid Kindermann,[4] Antonio Brucato,[5] Francesco Giuseppe De Rosa,[6] Yehuda Adler,[7] Gaetano Maria De Ferrari[8]



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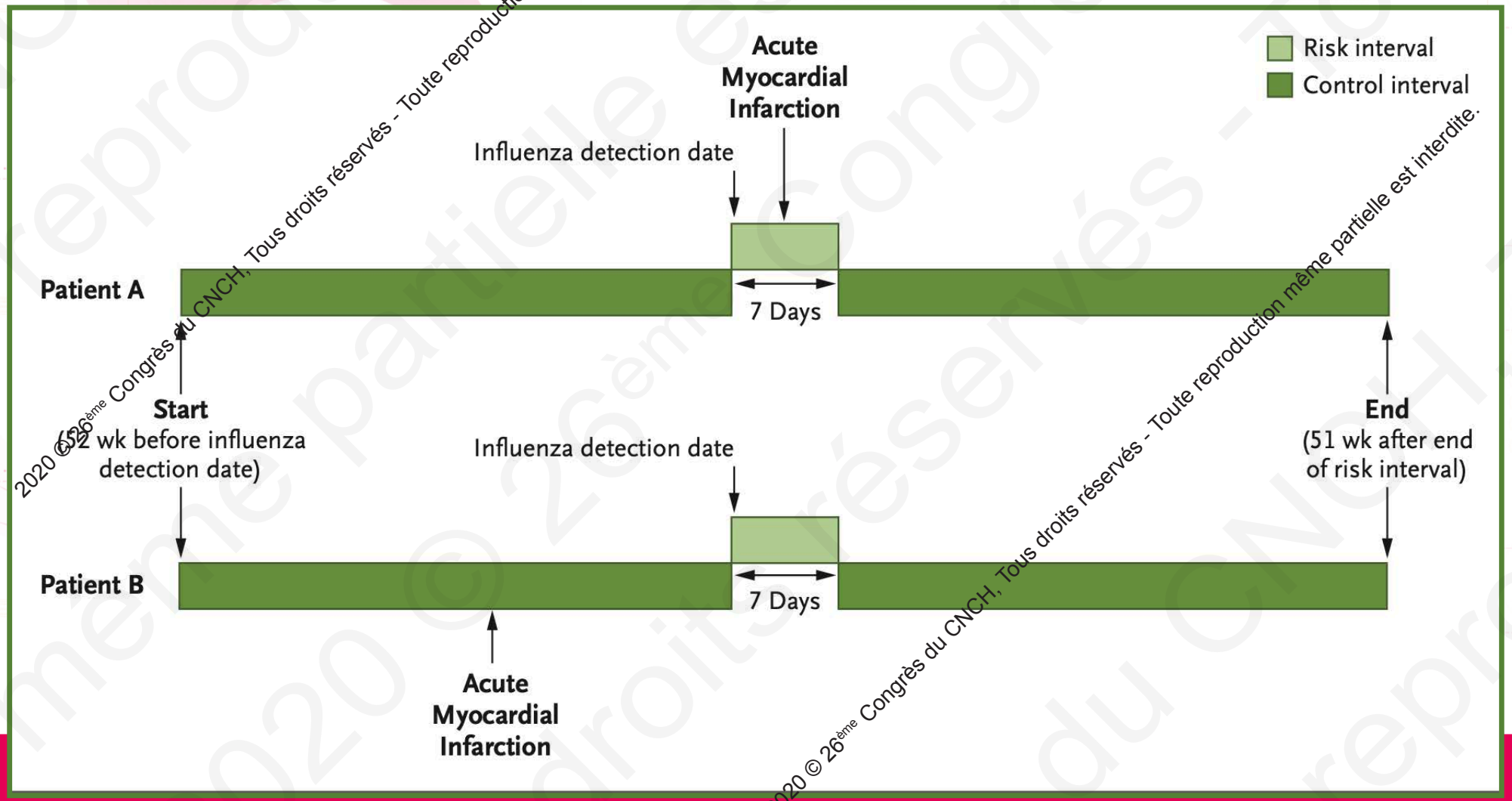
Imazio M, *et al*. *Heart* 2020;**106**:1127–1131

Acute Myocardial Infarction after Laboratory-Confirmed Influenza Infection



Kwong, N Engl J Med 2018;378:345-53.

Acute Myocardial Infarction after Laboratory-Confirmed Influenza Infection

Characteristic	Value
No. of patients	332
Age	
Median (IQR) — yr	77 (65–86)
Age group — no. (%)	
≤65 yr	85 (26)
>65 yr	247 (74)
Sex — no. (%)	
Male	174 (52)
Female	158 (48)
AMI hospita	
Yes	79 (24)
No	253 (76)
Cardiovascu	
Diabetes	163 (49)
Dyslipidemia	126 (38)
Hypertension	281 (85)
Influenza vaccination status — no. (%)	
Vaccinated	102 (31)
Not vaccinated	230 (69)

Risque d'IDM
x 6

Kwong, N Engl J Med 2018;378:345-53.

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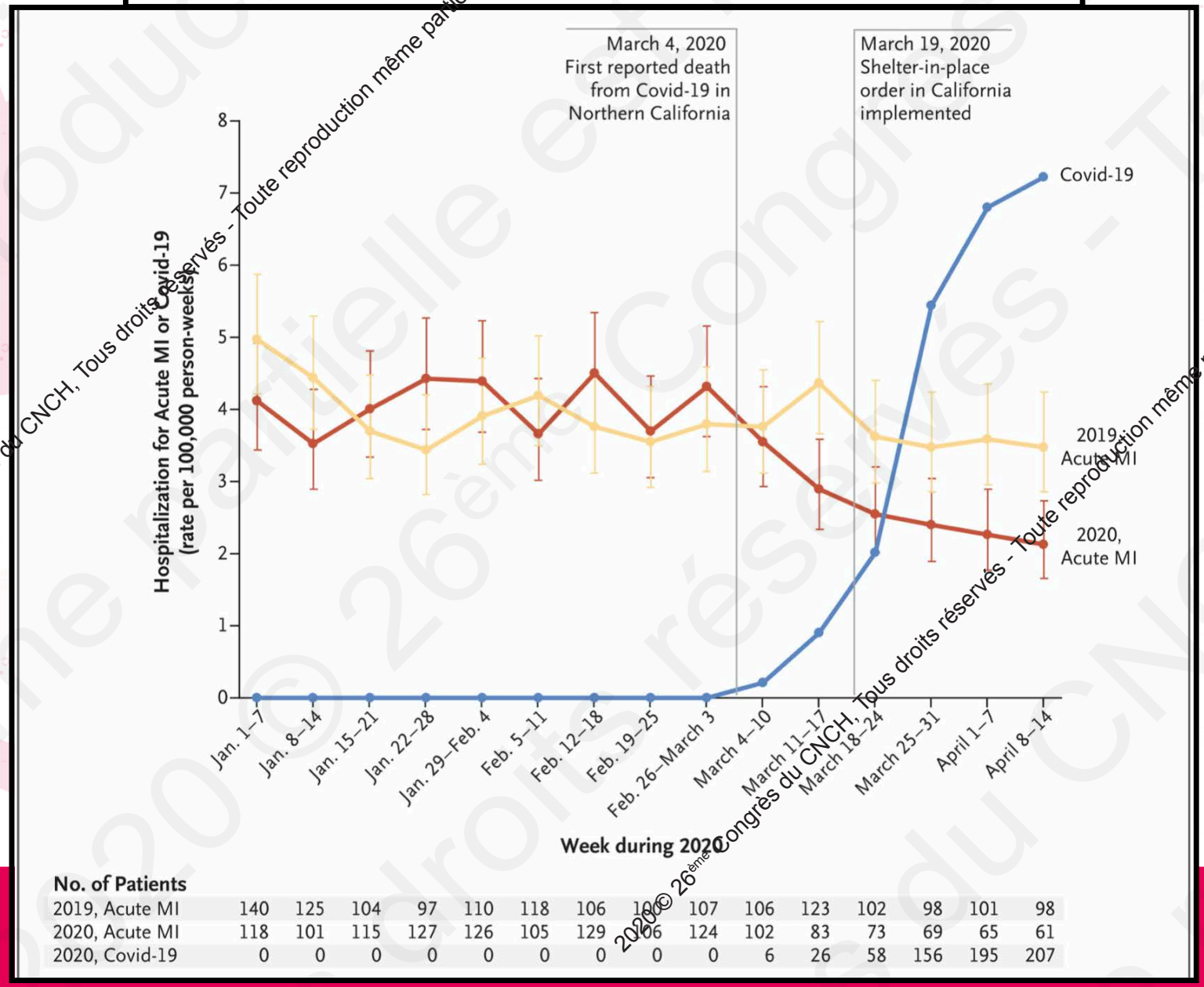
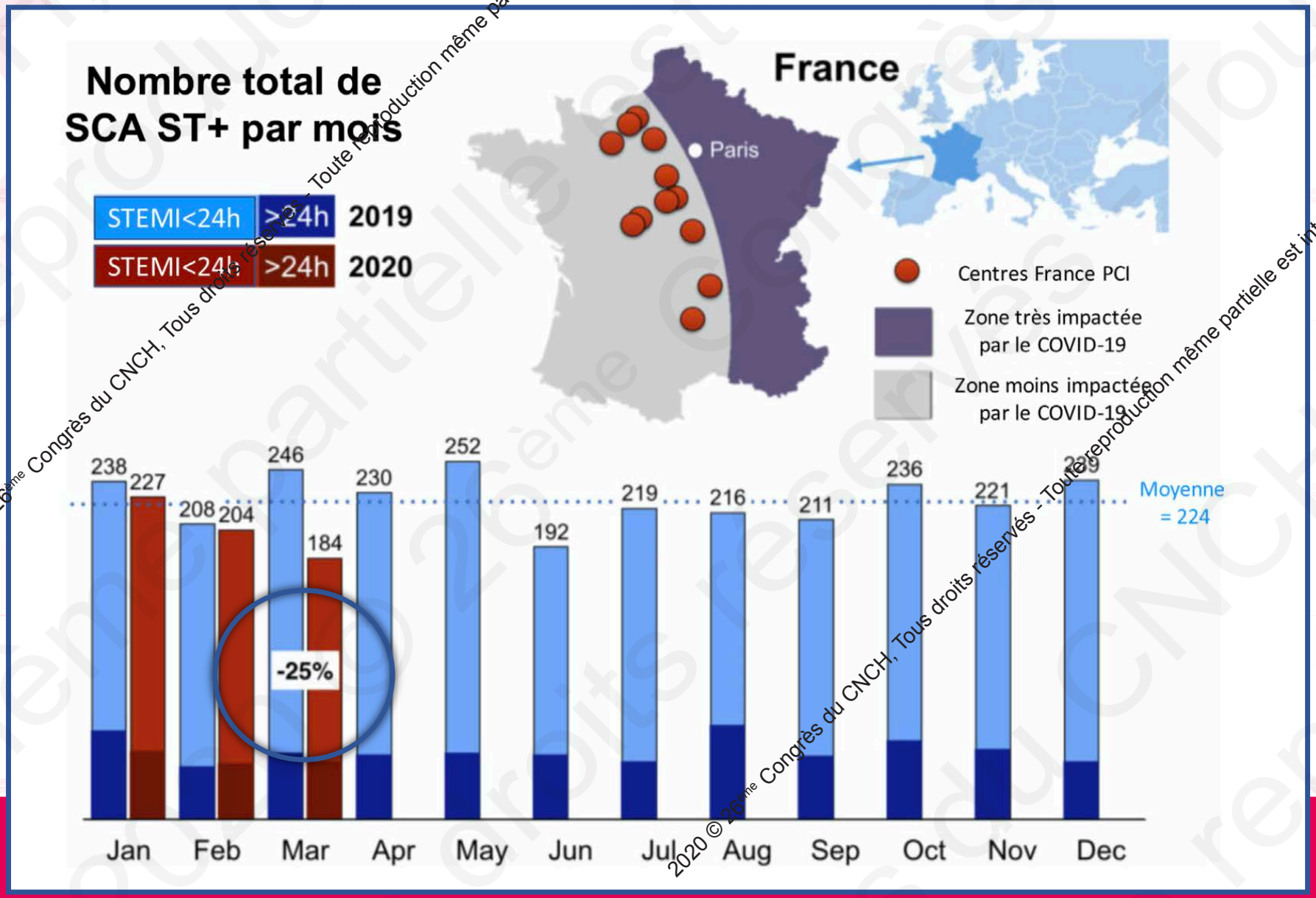
The Covid-19 Pandemic and the Incidence of Acute Myocardial Infarction



No. of Patients															
2019, Acute MI	140	125	104	97	110	118	106	100	107	106	123	102	98	101	98
2020, Acute MI	118	101	115	127	126	105	129	106	124	102	83	73	69	65	61
2020, Covid-19	0	0	0	0	0	0	0	0	0	6	26	58	156	195	207

N Engl J Med 2020; 383:691-693

FRANCE-PCI



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Out-of-hospital cardiac arrest during the COVID-19 pandemic in Paris, France: a population-based, observational study

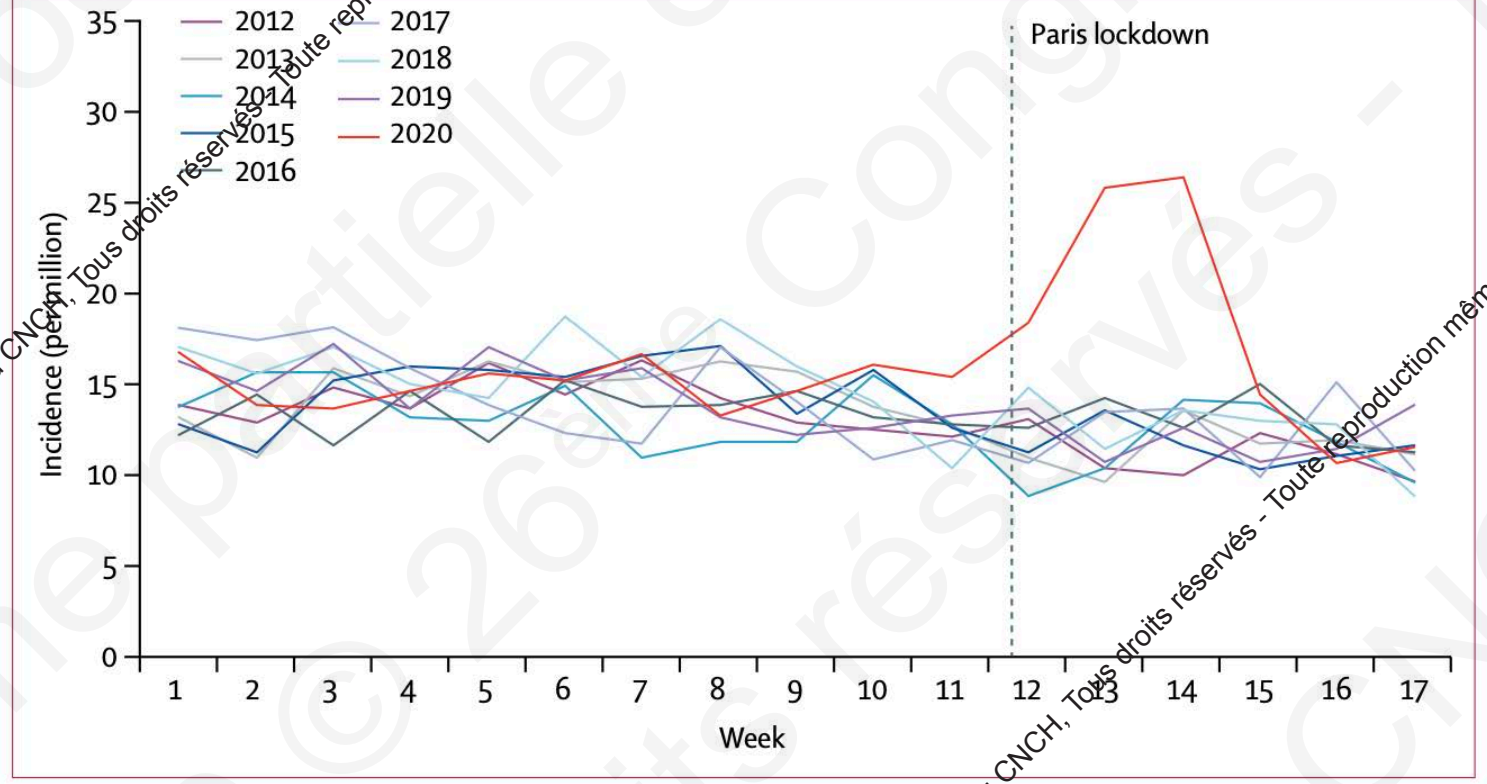


Figure 1: **Weekly incidences of OHCA during the first 17 weeks of years 2012 to 2020**
Compared with previous years and with the beginning of 2020, there was a surge in OHCA incidence starting week 12 of 2020, with a rapid return to normal by week 15. OHCA=out-of-hospital cardiac arrest.

The NEW ENGLAND JOURNAL of MEDICINE

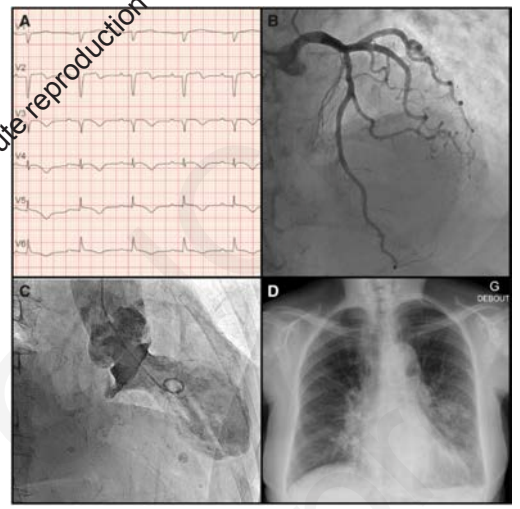
ST-Segment Elevation in Patients with Covid-19 — A Case Series

Characteristic	Total (N=18)	Myocardial Infarction (N=8)	Noncoronary Myocardial Injury (N=10)
Echocardiographic findings — no. (%)¶			
Normal ejection fraction	8/17 (47)	1/8 (12)	7/9 (78)
Low ejection fraction	9/17 (53)	7/8 (88)	2/9 (22)
Regional wall-motion abnormality	6/17 (35)	6/8 (75)	0/9
Coronary angiography — no. (%)	9 (50)	6 (75)	3 (30)
Obstructive coronary artery disease — no./total no. (%)	6/9 (67)	6/6 (100)	0/3
Percutaneous coronary intervention — no./total no. (%)	5/9 (56)	5/6 (83)	0/3

Bangalore et al. NEJM 2020, 382;25

MYOCARDITE AIGUE

- Prévalence inconnue (IRM, Biopsie)
- Elle est probable par divers mécanismes possibles (viral direct, cytokines)
- Registre MYOCOVID - Dr Clément Delmas
- TakoTsubo



Troubles du Rythme

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

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

Wang JAMA 2020

Arrhythmic Complications of Patients Hospitalized With COVID-19

Incidence, Risk Factors, and Outcomes

	All Patients (n=1053)	Arrhythmia (n=270)	No Arrhythmia (n=783)	*P* Value
Clinical Characteristics				
Lowest LVEF during hospitalization, %, median [IQR]	59 [48–66]	61 [47.5–67]	57.5 [52–66]	0.690
Decreased RV function, n/total n (%)	23/146 (15.8)	15/88 (17.0)	8/58 (13.8)	0.598
Clinical outcomes				
ICU admission	349 (33.1)	178 (65.9)	171 (21.8)	<0.001
Hypotension requiring vasopressor therapy	323 (30.7)	169 (62.8)	154 (19.7)	<0.001
Respiratory failure requiring mechanical ventilation	327 (31.1)	174 (64.4)	153 (19.5)	<0.001
Bacteremia	100 (9.5)	60 (22.2)	50 (5.1)	<0.001
Venous thromboembolism	54 (5.1)	23 (8.5)	31 (4.0)	0.003
Stroke/TIA	18 (1.7)	16 (5.9)	2 (0.3)	<0.001
Acute kidney injury requiring new RRT	34 (3.3)	12 (4.4)	22 (2.8)	0.190
Death	184 (17.5)	94 (34.8)	90 (11.5)	<0.001

ACE indicates angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; ICU, intensive care unit; IQR, interquartile range; LVEF, left ventricular ejection fraction; RRT, renal replacement therapy; TIA, transient ischemic attack.

Peltzer. Circ Arrhythm Electrophysiol. 2020

CONCLUSION

- ATCD cardiologique et HTA : Vigilance accrue
- Pas de CI aux inhibiteurs du SRAA
- Anomalies de coagulation de mauvais pronostic
- Majoration du risque de MTE, prévenu par thrombophylaxie
- La Lésion Myocardique Aigue est de mauvais pronostic mais prévalence STEMI et Myocardite inconnue.
- Quid du TakoTsubo
- Pas forcément lien entre sus-ST ECG et occlusion coronaire
- Arythmie = mauvais pronostic

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