Aspects thérapeutiques de COVID-19 "non compliquée"

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MEDITHON 19
Le 19 Avril 2020

Introduction

- Pandémie à SARS-CoV-2 (185 pays)

- **Plus 2 millions de cas confirmés**
- **Plus de 150 000 décès** (COVID-19)

➡ **Urgence de santé publique à portée internationale**

- **Course contre la montre : . Traitement spécifique**
  . Vaccin

Traitement

- **Traitement symptomatique (standard) : O2 +++**
- Prise en charge des comorbidités décompensées
- Antibiotiques en cas de surinfection bactérienne
- **Molécules "repositionnées" et "recyclées" !!**
  . Anti-viraux
  . Anti-parasitaires
  . Antibiotiques
  . Immunodulateurs

Figure 4. Phylogenetic Analysis of 2019-nCoV and Other Betacoronavirus Genomes in the Orthocoronavirinae Subfamily.

ARTICLE

https://doi.org/10.1038/s41467-019-13940-6 OPEN

Comparative therapeutic efficacy of remdesivir and combination lopinavir, ritonavir, and interferon beta against MERS-CoV

Timothy P. Sheahan[1,5*], Amy C. Sims[1,5], Sarah R. Leist[1], Alexandra Schäfer[1], John Won[1], Ariane J. Brown[1],

NATURE COMMUNICATIONS | (2020)11:222 | https://doi.org/10.1038/s41467-019-13940-6 | www.nature.com/naturecommunications

- **Lopinavir/ritonavir + Ribavirine**

  . SARS-CoV: amélioration clinique chez 21 patients

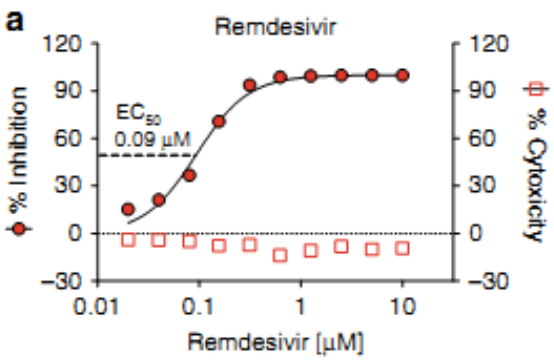
  . MERS-CoV: étude chez 76 patients (Miracle)

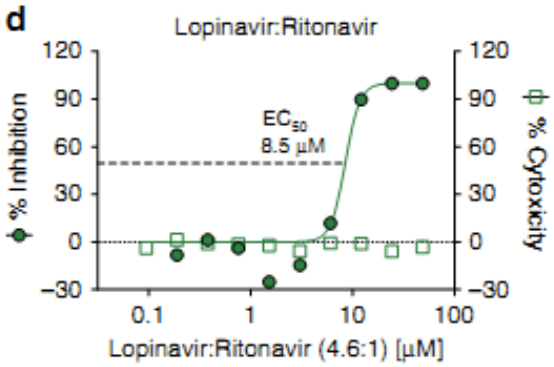
- **Remdisivir (RDV):** antiviral large spectre

  - MERS-CoV, *in vitro*

    . Inhibition de la réplication virale

    . Activité supérieure à celle du LPV/r





In vitro inhibition of severe acute respiratory syndrome coronavirus by chloroquine

Els Keyaerts, Leen Vijgen, Piet Maes, Johan Neyts, Marc Van Ranst*

Biochemical and Biophysical Research Communications 323 (2004) 264–268

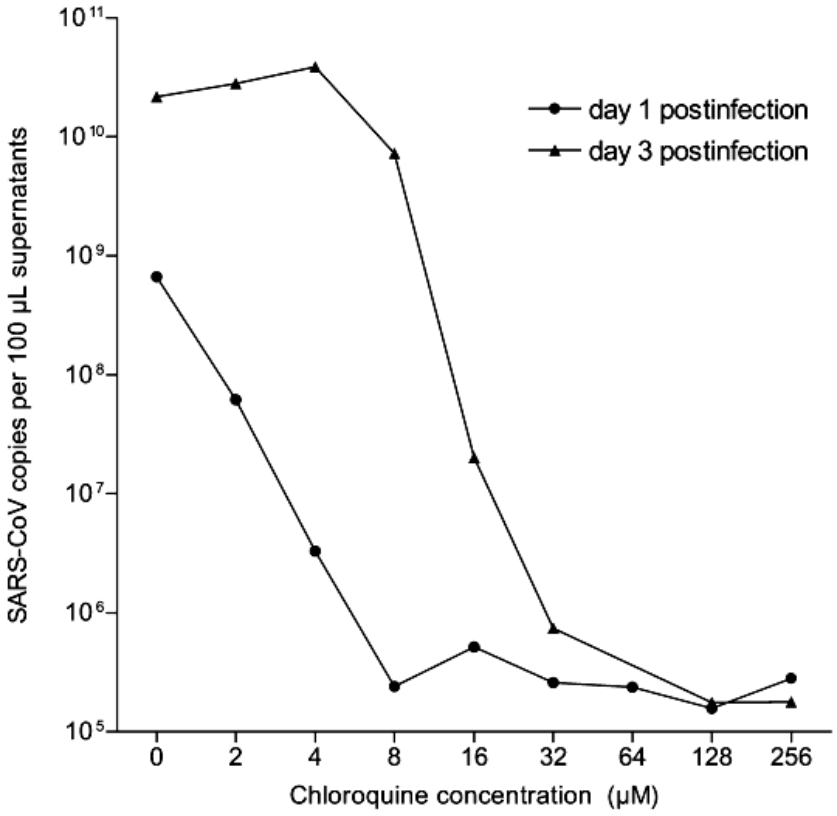


Fig. 2. Dose–response of inhibitory effect of chloroquine on the virus yield. SARS-CoV-infected Vero E6 cells were incubated for one and three days in the presence of 0, 2, 4, 8, 16, 32, 64, 128, or 256 µM

- **Augmentation du PH :**
  . Membrane plasmatique
  . Membrane du système endosomal-lysosomal

- **Effet antiviral en inhibant les étapes de réplication virus :**
  . Maturation, recyclage
  . Présentation antigénique
  . Autophagie du virus

Pantone D. Clin Drug Investig. 2018 Aug;38(8):653-671

Physiopathologie du COVID-19

- **Phase de réplication virale**

- **Phase de réaction inflammatoire :**

  tempête de cytokines au niveau des poumons

- **Phase des manifestations vasculaires :**

  . manifestations thrombo-emboliques,

  . fuite capillaire,

  . activation endothéliale, coagulation, …

Maladie inflammatoire systémique

Keith *et al. Critical Care* (2020) 24:128

Sanders et al. JAMA Published online April 13, 2020

Physiopathologie du COVID-19

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Antiviraux

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. fuite capillaire,

. activation endothéliale, coagulation, …

Maladie inflammatoire systémique

- immuno-modulateurs
- anti-inflammatoires

anti-cytokines

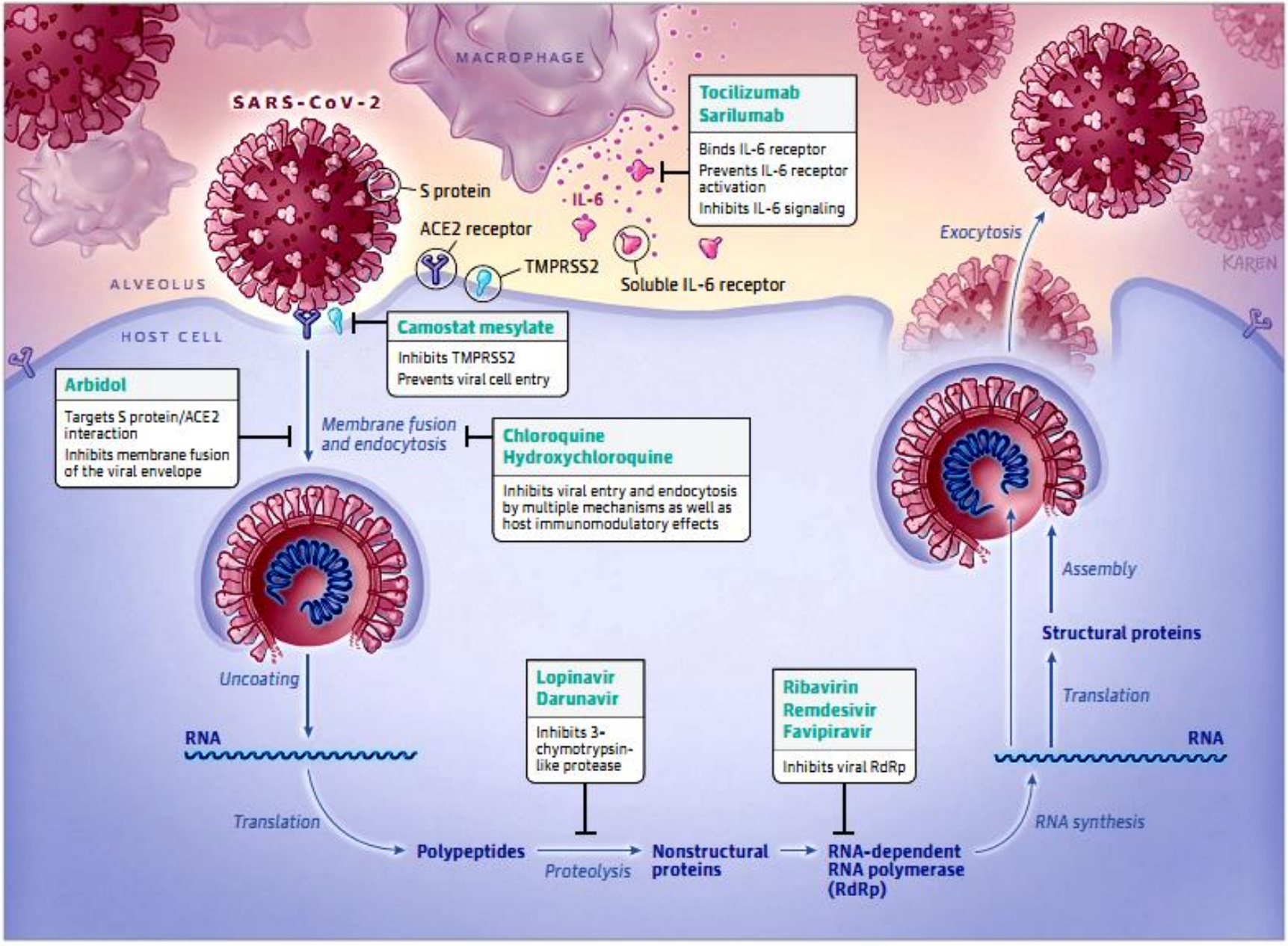
- immunoglobulines
- anticoagulation

…

Keith *et al. Critical Care* (2020) 24:128

Sanders et al. JAMA Published online April 13, 2020

Figure. Simplified Representation of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Viral Lifecycle and Potential Drug Targets



Sanders et al. JAMA Published online April 13, 2020

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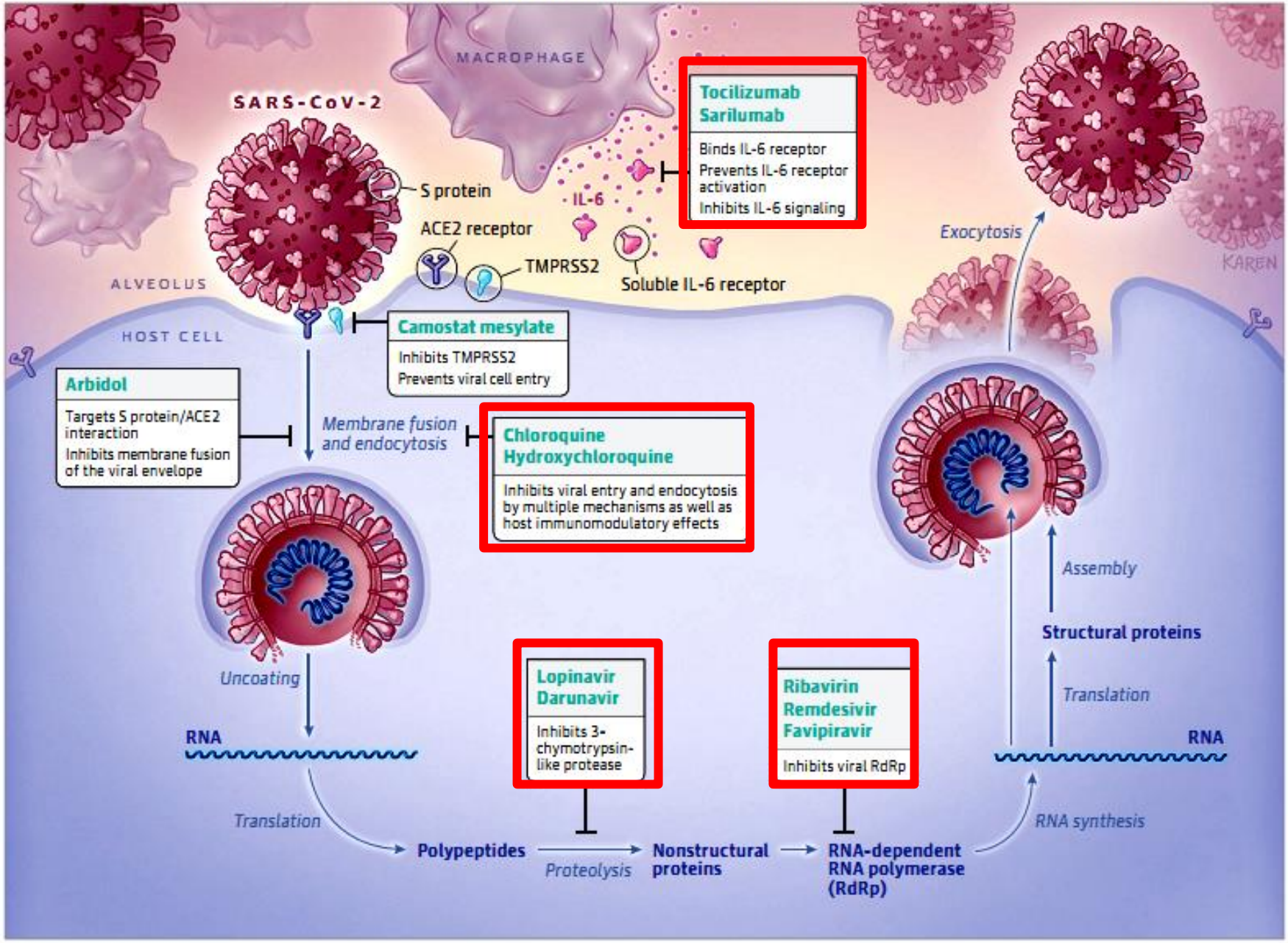
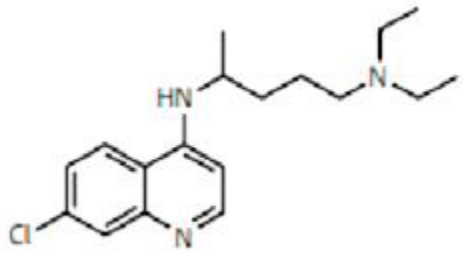
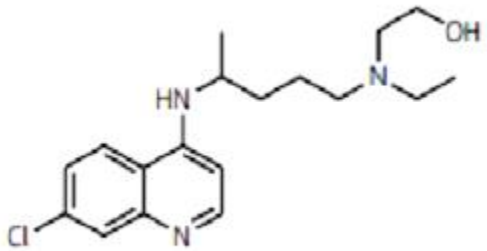


Sanders et al. JAMA Published online April 13, 2020

Chloroquine / Hydroxychloroquine



Chloroquine (CQ)



Hydroxychloroquine (HCQ)

- Alcaloïdes appartenant au groupe des quinoléines
- Anti-paludéens
- Action immunomodulatrice

Hydroxychloroquine : . polyarthrite rhumatoïde

. lupus érythémateux systémique

Chloroquine / Hydroxychloroquine

Effets indésirables

- Troubles digestifs (nausées, vomissements, diarrhées) ++
- Des faiblesses musculaires
- Troubles du rythme cardiaque
- Rétinopathie

Contre indication

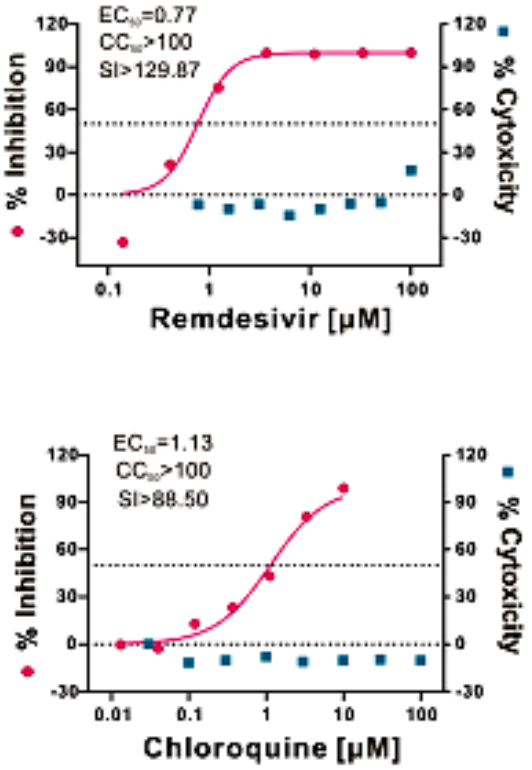
- Rétinopathie préexistante
- Hypersensibilité connue aux amino-4 quinoléines
- Onde QT > 500 ms
- L'allaitement
- Epilepsie, myasthénie grave, porphyrie

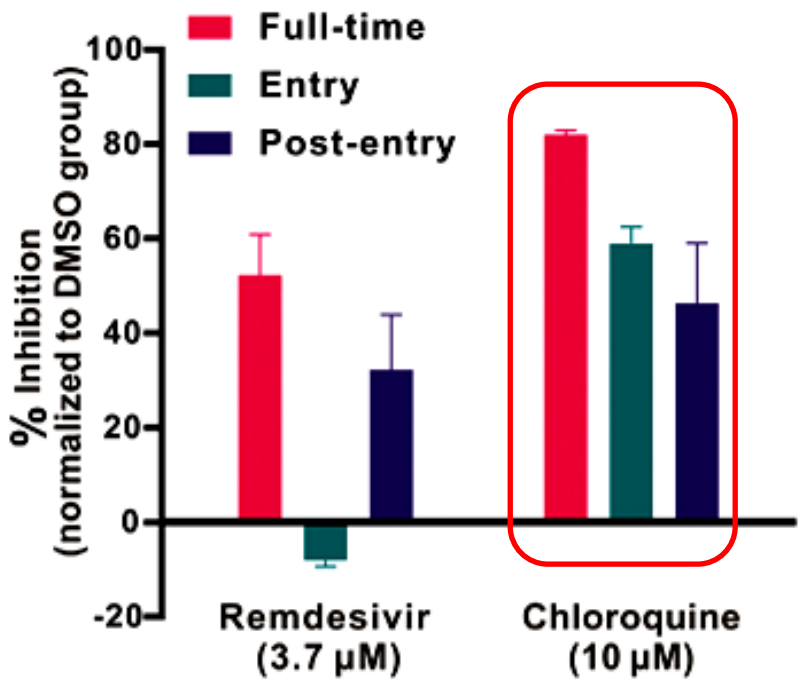
http://base-donnees-publique.medicaments.gouv.fr
https://www.drugbank.ca/drugs/DB01611 (consulté le 17/04/2020)

LETTER TO THE EDITOR OPEN

Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro

Cell Research (2020) 30:269–271; https://doi.org/10.1038/s41422-020-0282-0





Time-of-addition experiment of remdesivir and chloroquine

The antiviral activities of the test drugs against 2019-nCoV in vitro.

Wang M et al. Cell Research 2020

Biosci Trends. 2020 Feb 19. doi: 10.5582/bst.2020.01047. [Epub ahead of print]

Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies.

Gao J[1], Tian Z[2], Yang X[2].

- **Etude multicentrique : 100 patients Covid-19 (Wuhan)**
- **Chloroquine >> groupe contrôle** :
  . Délai d'amélioration clinique
  . Clairance de la charge virale
- **Pas d'effets indésirables**
- **Mais,** peu d'informations sur
  . Caractéristiques des patients
  . Méthodologie, paramètres d'évaluation

Aminoquinolines Against Coronavirus Disease 2019 (COVID-19): Chloroquine or Hydroxychloroquine

- **Hydroxychloroquine:**

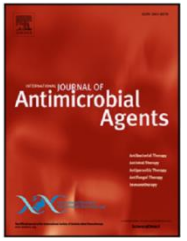
  . In Vitro antiviral activity +++

  Yao et al CID Mar 2020

  . lower ocular toxicity

- **Chloroquine can interact with lopinavir/ritonavir, resulting in prolongation of the QT interval**

Please cite this article as: Zahra Sahraei Pharm. D, BCPS , Minoosh Shabani MD , Shervin Shokouhi MD, MPH , Ali Saffaei Pharm. D , Aminoquinolines Against Coronavirus Disease 2019 (COVID-19): Chloroquine or Hydroxychloroquine, *International Journal of Antimicrobial Agents* (2020), doi: https://doi.org/10.1016/j.ijantimicag.2020.105945



In vitro testing of Hydroxychloroquine and Azithromycin on SARS-CoV-2 shows 2 synergistic effect

- Essai in vitro

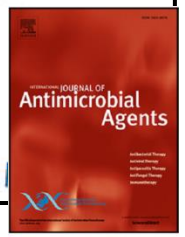
- **Effet synergique** de l'association de **l'hydroxychloroquine et de l'azithromycine** sur la réduction de la réplication du virus SARS-CoV-2

- A des **concentrations compatibles** avec celles pouvant être obtenues au niveau pulmonaire chez l'humain

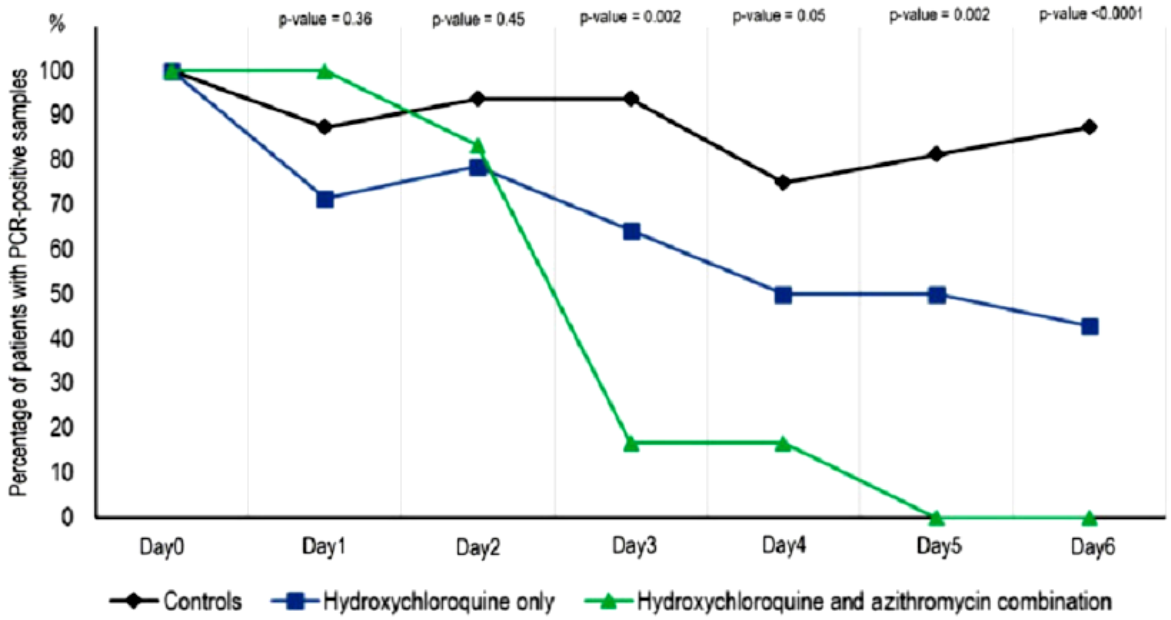
Andreani J, Le Bideau M, Duflot I, et coll
https://www.mediterranee-infection.com/wp content/uploads/2020/03/Andreani-et-al.-Pre-print-V2.pdf (page consultée le 17 avril 2020)

Hydroxychloroquine et azithromycine comme traitement de COVID-19: résultats d'un essai clinique non randomisé en ouvert

Philippe Gautret [a, b, $], Jean-Christophe Lagier [a, c, $], Philippe Parola [a, b], Van Thuan Hoang [a, b, d], Line



28 patients : asymptomatic, 22 upper respiratory tract infection symptoms and 8 had lower respiratory tract infection symptoms



. Augmente le succès thérapeutique

. Réduit la durée d'hospitalisation

. Réduit la contagiosité

Graphique 1 . Pourcentage de patients avec des échantillons nasopharyngés positifs pour la PCR de l'inclusion au jour 6 après l'inclusion chez les patients COVID-19 traités par l'hydroxychloroquine et chez les patients témoins COVID-19.

Hydroxychloroquine et azithromycine comme traitement de COVID-19: résultats d'un essai clinique non randomisé en ouvert

Philippe Gautret [a, b, $], Jean-Christophe Lagier [a, c, $], Philippe Parola [a, b], Van Thuan Hoang [a, b, d], Line Meddeb [a],

Limites de l'étude :

- **Absence de répartition aléatoire**

- **Groupe contrôle** :

  . patients ayant refusé de recevoir le traitement

  . patients provenant d'autres centres hospitaliers

- **Aucun ajustement** tenant compte de :

  . **facteurs de risque** d'aggravation

  . **délai** depuis l'apparition des symptômes

  . **sévérité** de l'atteinte à l'inclusion

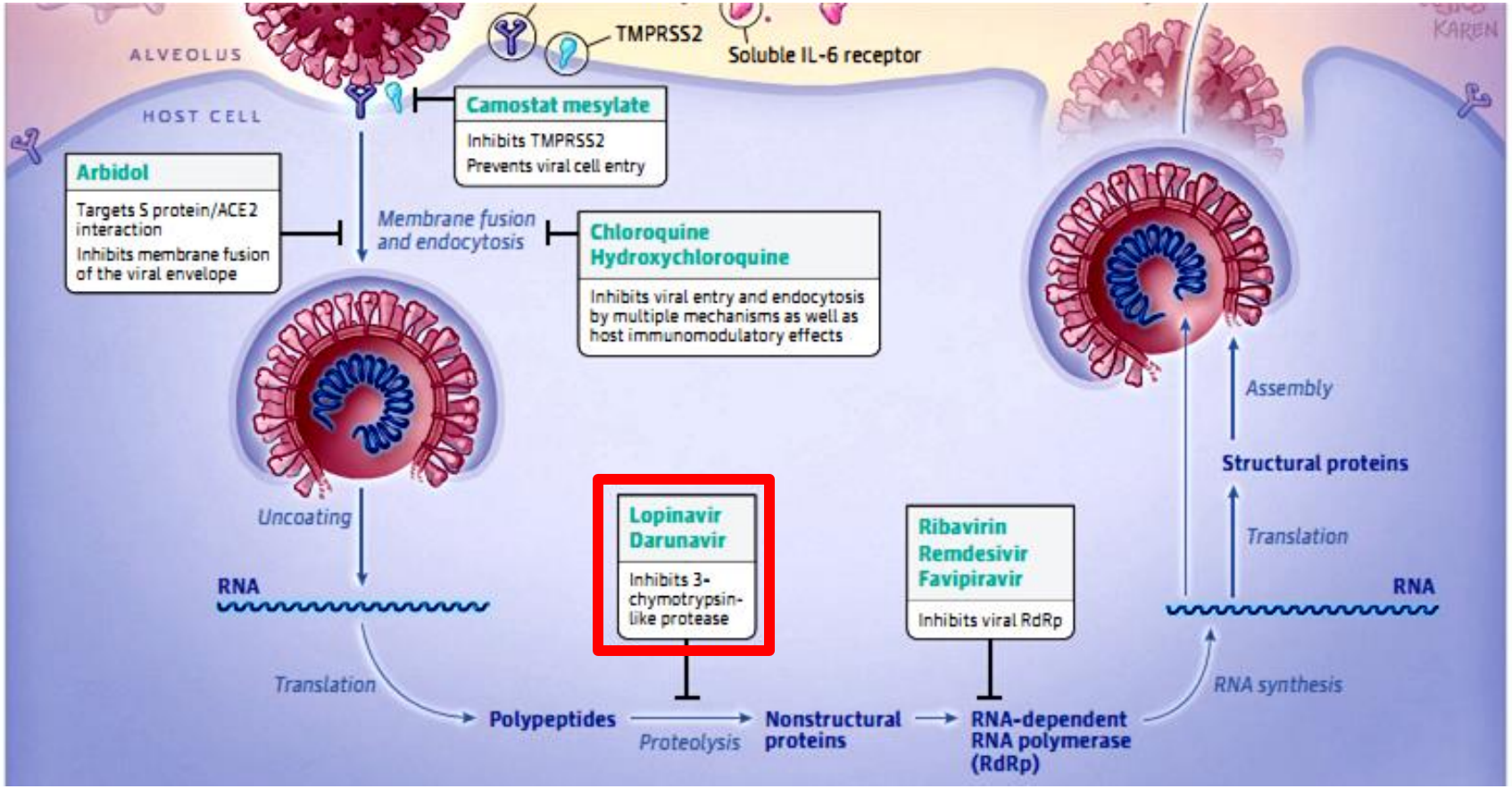
Clinical and microbiological effect of a combination of hydroxychloroquine and azithromycin in 80 COVID-19 patients with at least a six-day follow up: an observational study

Running title: Hydroxychloroquine-Azithromycin and COVID-19

Philippe Gautret[1,2,£], Jean-Christophe Lagier[1,3,S], Philippe Parola[1,2], Van Thuan Hoang[1,2,4],

- **In 80 patients** receiving a combination of **hydroxychloroquine and azithromycin**
- **A clinical improvement** in all
  but one 86 year-old patient who died, and one 74 year-old patient
- **A rapid fall of nasopharyngeal viral load** tested by qPCR
  83% negative at Day 7, and 93% at Day 8

Lopinavir/ritonavir



Sanders et al. JAMA Published online April 13, 2020

Lopinavir/ritonavir

- Association fixe d'inhibiteurs de protéase
- Antirétroviral (VIH) : adulte et enfant
- **Troubles digestifs**: diarrhée, nausées et vomissements
- **Activité in vitro et in vivo**: SARS-CoV, MERS-CoV

De Wilde AH, et al. Antimicrob Agents Chemother. 2014 Aug;58
Fuk-Woo J, et al. J Infect Dis, 2015 Dec

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Trial of Lopinavir–Ritonavir in Adults Hospitalized with Severe Covid-19

- **Randomized, controlled trial**

  199 patients COVID-19 : hypoxemic pneumoniae (SaO2 < 94 %)

  (99 received lopinavir-ritonavir and 100 standard care alone)

- **Lopinavir-ritonavir was not associated with clinical improvement or mortality**

  median time to clinical improvement 16 days vs 16 days,

  HR = 1.31 [0.95 –1.85]

Cao B et al, China. NEJM 19 MAR 2020

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  median time to clinical improvement 16 days vs 16 days,

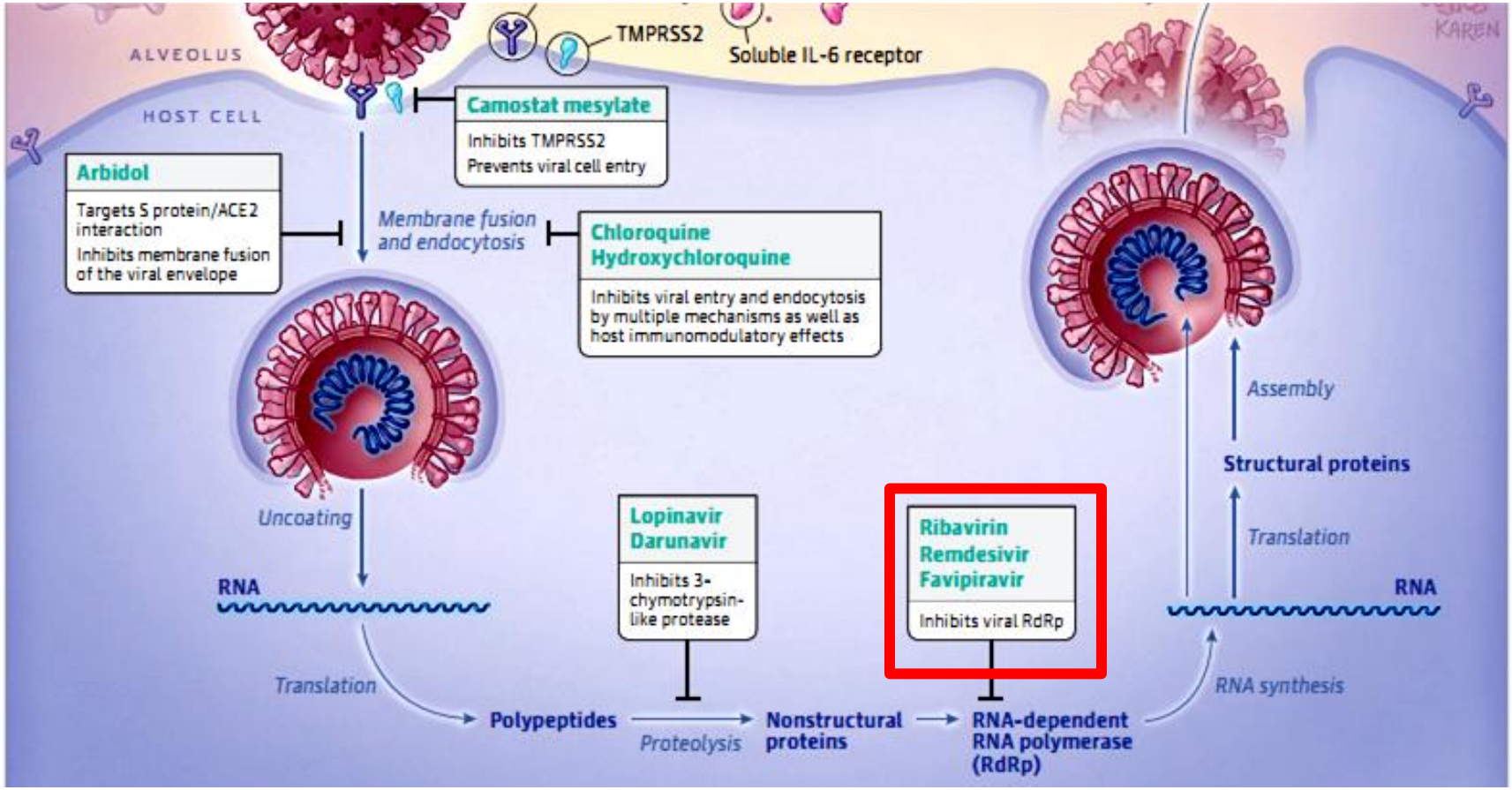
  HR = 1.31 [0.95 –1.85]

- **Post-hoc analysis: significant less mortality with early treatment**

  (< 12 days) : 19% versus 27,1%

Cao B et al, China. NEJM 19 MAR 2020

Remdesivir



Sanders et al. JAMA Published online April 13, 2020

Remdesivir

- **Analogue nucléosidique** de l'adénine
- **Activité antivirale** en s'incorporant dans les brins d'ARN du virus
- **Activité in vitro et in vivo**: SARS-CoV, MERS-CoV

  Activité supérieure au LPV/r et interféron-bêta
- **Bon profil de sécurité:** développement pour Ebola

Sheahan TP, et al. Nat Commun 2020 Jan 10;11(1):222
Brown AJ, et al. Antiviral Res. 2019;169:104541

LETTER TO THE EDITOR OPEN

Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro

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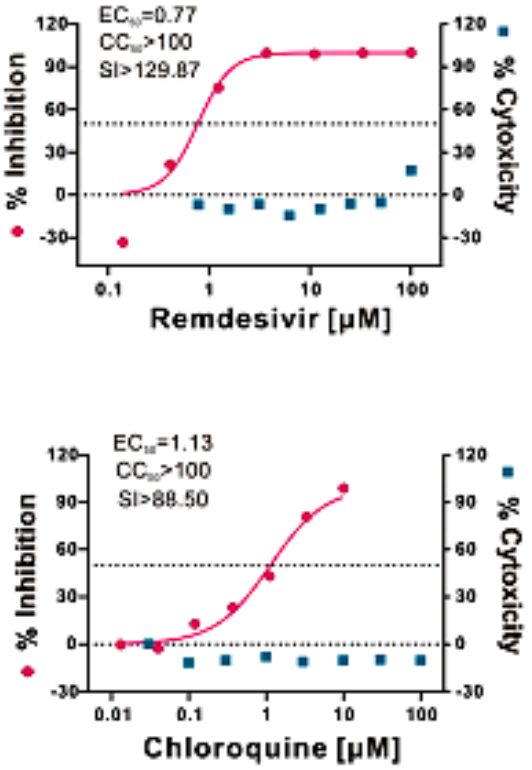

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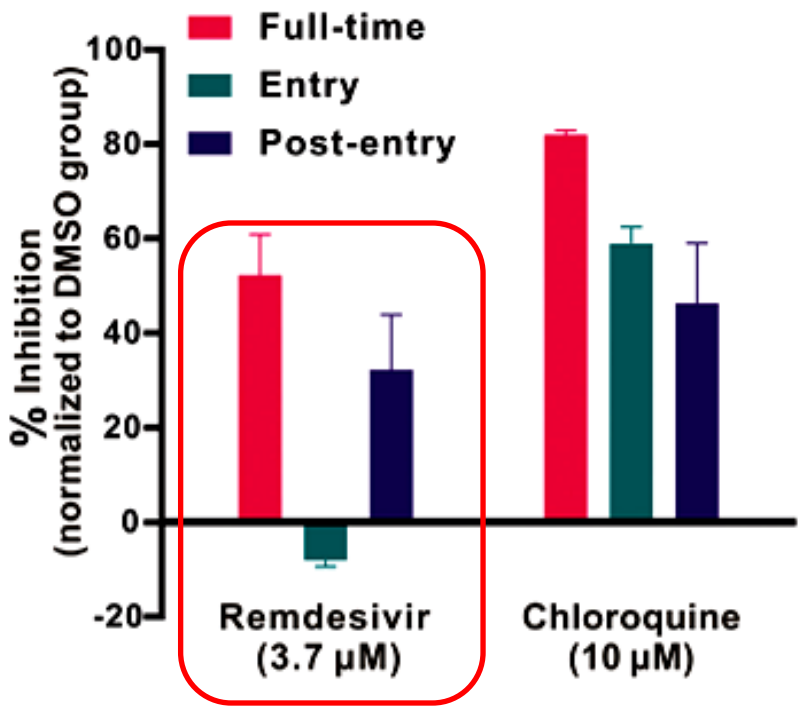

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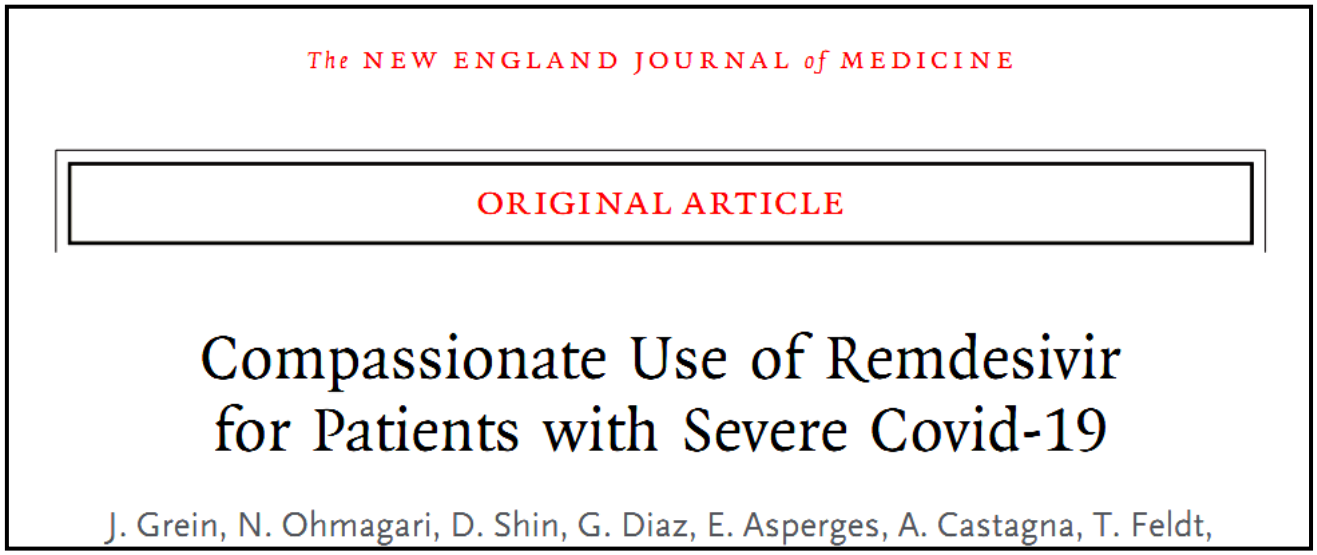


The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Compassionate Use of Remdesivir for Patients with Severe Covid-19

J. Grein, N. Ohmagari, D. Shin, G. Diaz, E. Asperges, A. Castagna, T. Feldt,

- **COVID-19 hypoxemic pneumoniae** (SaO2 < 94 %)**:**
- 53 Patients received a 10-day course of remdesivir
- **17 of 30 patients (57%)** receiving mechanical ventilation who **were extubated**
- **Mortality was 18%** (6 of 34) among **patients receiving invasive ventilation**

This article was published on April 10, 2020, at NEJM.org.

Physiopathologie du COVID-19

- **Phase de réplication virale**

Antiviraux

- **Phase de réaction inflammatoire :**

tempête de cytokines au niveau des poumons

- **Phase des manifestations vasculaires :**

. manifestations thrombo-emboliques,

. fuite capillaire,

. activation endothéliale, coagulation, …

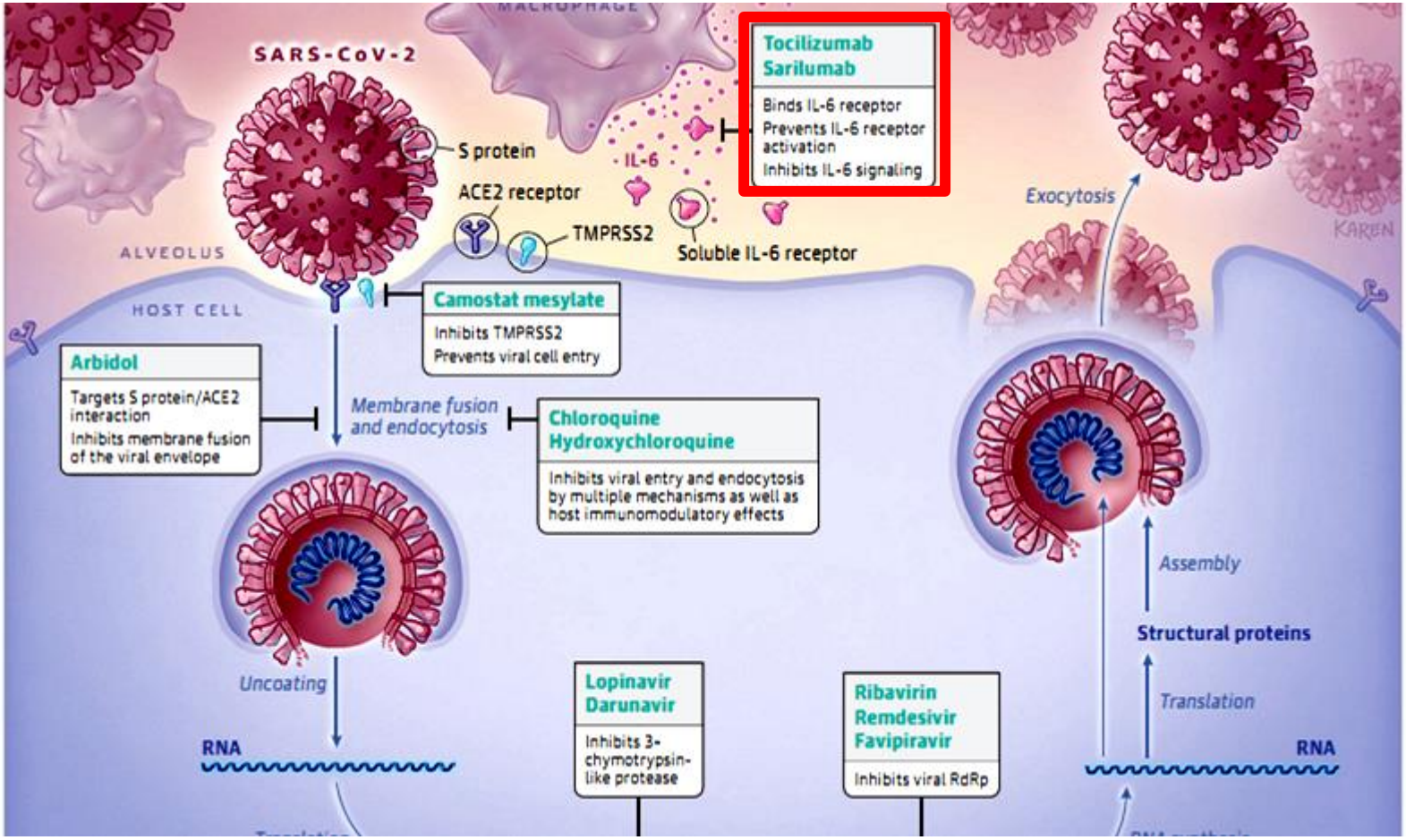
Maladie inflammatoire systémique

- Anti-IL6 ++
- Plasma des guéris ++
- Immunoglobulines
- Echanges plasma
- Corticoïdes ?
- Anticoagulation ?

Keith *et al. Critical Care* (2020) 24:128

Sanders et al. JAMA Published online April 13, 2020

Tocilizumab



Sanders et al. JAMA Published online April 13, 2020

Tocilizumab

- **Un anticorps monoclonal** humanisé dirigé **contre le récepteur de l'interleukine 6 humaine** (IL-6)

- Indiqué dans la polyarthrite rhumatoïde

- **IL-6** : un rôle fondamental dans les manifestations inflammatoires chez **COVID-19**

Tocilizumab

Effective Treatment of Severe COVID-19 Patients with Tocilizumab

Xiaoling Xu[1,#*], Mingfeng Han[2,#], Tiantian Li[1], Wei Sun[2], Dongsheng Wang[1], Binqing Fu[3,4], Yonggang Zhou[3,4], Xiaohu Zheng[3,4], Yun Yang[5], Xiuyong Li[6], Xiaohua Zhang[2], Aijun Pan[5], Haiming Wei[3,4*]

Abstract:

Background: In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was identified in Wuhan, China, which spread rapidly and has become a world-wide public health challenge. We aimed to assess the efficacy of tocilizumab in severe patients with Corona Virus Disease-19 (COVID-19) and seek a new therapeutic strategy.

Methods: The patients diagnosed as severe or critical COVID-19 in The First Affiliated Hospital of University of Science and Technology of China (Anhui Provincial Hospital) and Anhui Fuyang Second People's Hospital were given tocilizumab in addition to routine therapy between February 5 and February 14, 2020. The changes of clinical manifestations, CT scan image, and laboratory examinations were retrospectively analyzed.

Findings: Within a few days, the fever returned to normal and all other symptoms improved remarkably. Fifteen of the 20 patients (75.0%) had lowered their oxygen intake and one patient need no oxygen therapy. CT scans manifested that the lung lesion opacity absorbed in 19 patients (90.5%). The No obvious adverse reactions were observed. Nineteen patients (90.5%) have been discharged on average 13.5 days after the treatment with tocilizumab and the rest are recovering well.

Plasma de patients guéris

JAMA | Preliminary Communication

Treatment of 5 Critically Ill Patients With COVID-19 With Convalescent Plasma

Chenguang Shen, PhD; Zhaoqin Wang, PhD; Fang Zhao, PhD; Yang Yang, MD; Jinxiu Li, MD; Jing Yuan, MD; Fuxiang Wang, MD; Delin Li, PhD; Minghui Yang, PhD; Li Xing, MM; Jinli Wei, MM; Haixia Xiao, PhD; Yan Yang, MM; Jiuxin Qu, MD; Ling Qing, MM; Li Chen, MD; Zhixiang Xu, MM; Ling Peng, MM; Yanjie Li, MM; Haixia Zheng, MM; Feng Chen, MM; Kun Huang, MM; Yujing Jiang, MM; Dongjing Liu, MD; Zheng Zhang, MD; Yingxia Liu, MD; Lei Liu, MD

EXPOSURES Patients received transfusion with convalescent plasma with a SARS-CoV-2–specific antibody (IgG) binding titer greater than 1:1000 (end point dilution titer, by enzyme-linked immunosorbent assay [ELISA]) and a neutralization titer greater than 40 (end point dilution titer) that had been obtained from 5 patients who recovered from COVID-19. Convalescent plasma was administered between 10 and 22 days after admission.

Plasma de patients guéris

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RESULTS All 5 patients (age range, 36-65 years; 2 women) were receiving mechanical ventilation at the time of treatment and all had received antiviral agents and methylprednisolone. Following plasma transfusion, body temperature normalized within 3 days in 4 of 5 patients, the SOFA score decreased, and PaO_2/FiO_2 increased within 12 days (range, 172-276 before and 284-366 after). Viral loads also decreased and became negative within 12 days after the transfusion, and SARS-CoV-2–specific ELISA and neutralizing antibody titers increased following the transfusion (range, 40-60 before and 80-320 on day 7). ARDS resolved in 4 patients at 12 days after transfusion, and 3 patients were weaned from mechanical ventilation within 2 weeks of treatment. Of the 5 patients, 3 have been discharged from the hospital (length of stay: 53, 51, and 55 days), and 2 are in stable condition at 37 days after transfusion.

Immunoglobulines IV

Open Forum Infectious Diseases

BRIEF REPORT

High-Dose Intravenous Immunoglobulin as a Therapeutic Option for Deteriorating Patients With Coronavirus Disease 2019

Wei Cao,[1] Xiaosheng Liu,[2] Tao Bai,[3] Hongwei Fan,[1] Ke Hong,[3] Hui Song,[3] Yang Han,[1] Ling Lin,[1] Lianguo Ruan,[3,a] and Taisheng Li[1,a]

[1]Department of Infectious Diseases, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences, Beijing, China, [2]Tsinghua-Peking Center for Life Sciences, School of Medicine, Tsinghua University, Beijing, China, and [3]Department of Infectious Diseases, Jin Yin-tan Hospital, Wuhan, China

The outbreak of coronavirus disease 2019 (COVID-19) has spread rapidly in China. Until now, no definite effective treatment has been identified. We reported on 3 patients with severe COVID-19 who received high-dose intravenous immunoglobulin (IVIg) with satisfactory recovery. Based on these observations, randomized studies of high-dose IVIg should be considered in deteriorating patients infected with COVID-19.

Corticoïdes et COVID-19 ?

Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury

Russel KD et al. Lancet (2020, February 15)

Corticosteroid treatment of patients with coronavirus disease 2019 (COVID-19)

Lei Zha[1], Shirong Li[2], Lingling Pan[3], Boris Tefsen[1], Yeshan Li[2], Neil French[4], Liyun Chen[5], Gang Yang[2], Elmer V Villanueva[1]

Zha L et al. Med J Aust. (2020, Marsh 9)

Echanges plasmatiques

Keith *et al. Critical Care* (2020) 24:128
https://doi.org/10.1186/s13054-020-2836-4

Critical Care

EDITORIAL Open Access

A novel treatment approach to the novel coronavirus: an argument for the use of therapeutic plasma exchange for fulminant COVID-19

Philip Keith[1*], Matthew Day[1], Linda Perkins[1], Lou Moyer[1], Kristi Hewitt[1] and Adam Wells[2]

IDSA Guidelines

Last updated April 13, 2020 at 9:06 AM EDT and posted online at www.idsociety.org/COVID19guidelines.
Please check website for most updated version of these guidelines.

Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19

Recommendation 1. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends hydroxychloroquine/chloroquine in the context of a clinical trial. (Knowledge gap)

Recommendation 2. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends hydroxychloroquine/chloroquine plus azithromycin only in the context of a clinical trial. (Knowledge gap)

Recommendation 3. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends the combination of lopinavir/ritonavir only in the context of a clinical trial. (Knowledge gap)

IDSA Guidelines

Recommendation 4. Among patients who have been admitted to the hospital with COVID-19 pneumonia, the IDSA guideline panel suggests against the use of corticosteroids. (Conditional recommendation, very low certainty of evidence)

Recommendation 5. Among patients who have been admitted to the hospital with ARDS due to COVID-19, the IDSA guideline panel recommends the use of corticosteroids in the context of a clinical trial. (Knowledge gap)

Recommendation 6. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends tocilizumab only in the context of a clinical trial. (Knowledge gap)

Recommendation 7. Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel recommends COVID-19 convalescent plasma in the context of a clinical trial. (Knowledge gap)

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10 avril 2020

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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

- **Forme mineure avec co-morbidité sévère**
- **Forme modérée**
- **Forme Sévère**

Traitement anti-viral

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Médicament hors AMM, consentement du patient ++++

• **Hydroxychloroquine** cp à 200 mg : 200 mg x 3 le premier jour (J1), puis 200 mg x 2/jour du deuxième au dixième jour (J2 à J10),

ou

• **Chloroquine** cp à 100 mg : 400 mg x 2/jour pendant 10 jours.

• Et **Azithromycine** : 500 mg le premier jour (J1) et 250 mg du deuxième au cinquième jour (J2 à J5).

Surveillance
. Clinique
. ECG: J0, J3 et J5
. PCR: J0 et J10
. TDM: J30 après la sortie

Etude MEURI

Utilisation de l'association hydroxychloroquine ou chloroquine à l'azithromycine chez les patients covid-19 (+) selon la procédure MEURI[1]

schéma thérapeutique :

- hydroxychloroquine ou chloroquine (disponibilité) x 10 j

hydroxychloroquine 200 mg x 3/ j à J1 puis 200 mgx2/j de J2 à J10
ou chloroquine 400 mg x 2/jour x 10 jours.

+

- azithromycine x 5 jours :

500 mg à J1 puis 250 mg/j de J2 à J5

Ministère de la Santé/DSSB. 06 avril 2020

PACTT Study
(Plaquenil Azithromycin COVID Treatment Tunisia)

All hospitalized Patients (Class 1-2-3) will be randomized to receive one of the following combinations of treatments:

- **Hydroxychloroquine associated to azithromycin**

  . Hydroxychloroquine: 200 mg twice a day orally or via gastric tube (total 400 mg/day) for **5 days**

  . Azithromycin: 500 mg at day 1 then 250 mg/day for 4 days.

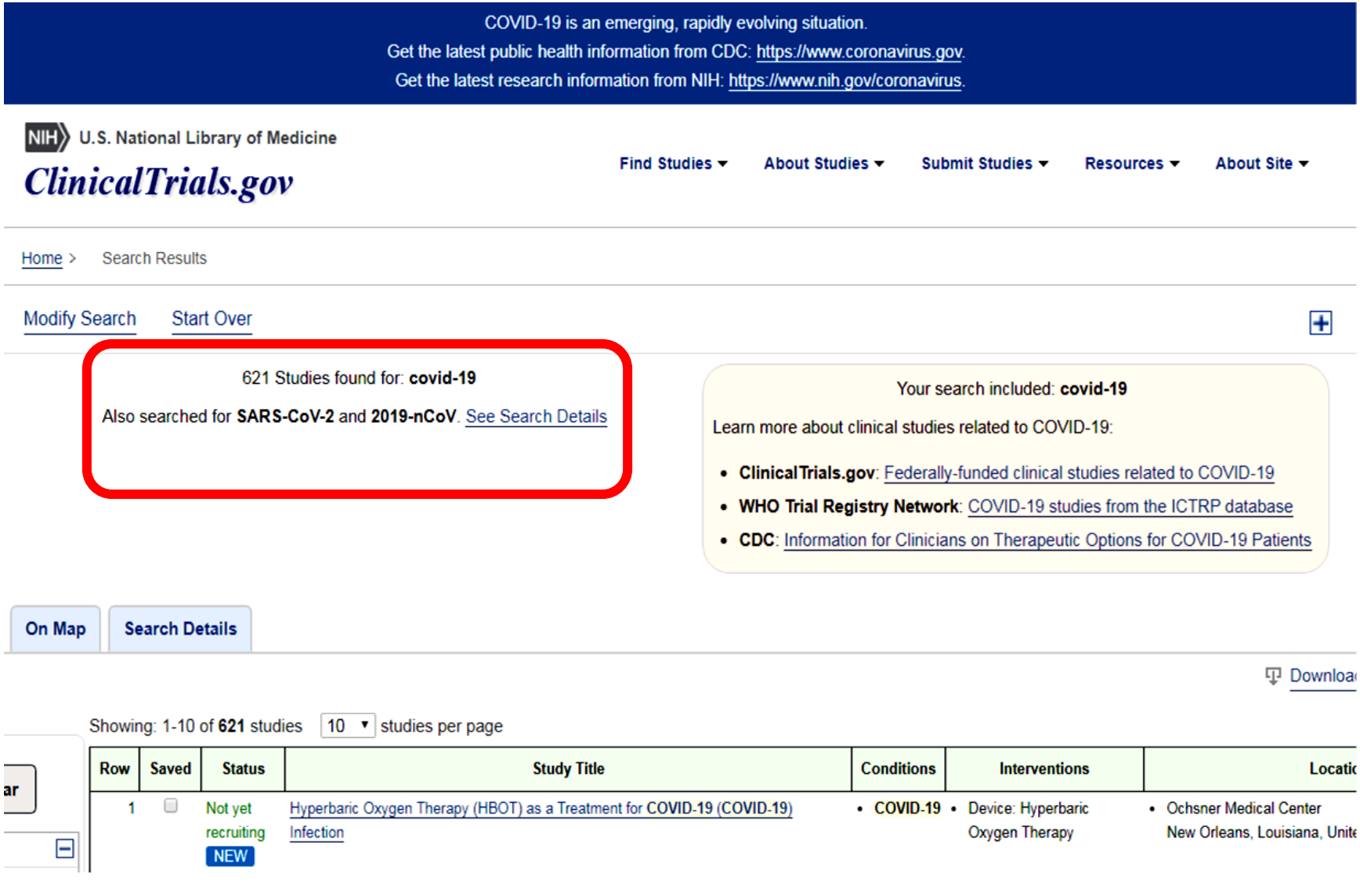
OR

- **Hydroxychloroquine**

  . Hydroxychloroquine: 200 mg twice a day orally or via gastric tube (total 400 mg/day) for **5 days**

Essais cliniques COVID-19

621 enregistrés (16 avril 2020)



COVID-19 is an emerging, rapidly evolving situation.
Get the latest public health information from CDC: https://www.coronavirus.gov.
Get the latest research information from NIH: https://www.nih.gov/coronavirus.

NIH U.S. National Library of Medicine
ClinicalTrials.gov

Find Studies ▾ About Studies ▾ Submit Studies ▾ Resources ▾ About Site ▾

Home > Search Results

Modify Search Start Over

621 Studies found for: **covid-19**

Also searched for **SARS-CoV-2** and **2019-nCoV**. See Search Details

Your search included: **covid-19**

Learn more about clinical studies related to COVID-19:

- **ClinicalTrials.gov**: Federally-funded clinical studies related to COVID-19
- **WHO Trial Registry Network**: COVID-19 studies from the ICTRP database
- **CDC**: Information for Clinicians on Therapeutic Options for COVID-19 Patients

On Map | Search Details

Download

Showing: 1-10 of **621** studies 10 studies per page

Row	Saved	Status	Study Title	Conditions	Interventions	Locatic
1	☐	Not yet recruiting NEW	Hyperbaric Oxygen Therapy (HBOT) as a Treatment for COVID-19 (COVID-19) Infection	• COVID-19	• Device: Hyperbaric Oxygen Therapy	• Ochsner Medical Center New Orleans, Louisiana, Unite

Molécules étudiés

- Hydroxychloroquine ; Chloroquine
- Lopinavir/ritonavir ; Atazanavir /ritonavir (IP)
- Azithromycine
- Remdesivir
- Oseltamivir
- Colchicine
- Zinc 200 mg
- Ivermectin
- Tociluzumab
- Camostat Mesilate
- Vaccin BCG

Trial of Treatments for COVID-19 in Hospitalized Adults (DisCoVeRy)

Adults (≥18 year-old) hospitalized for COVID-19 with:

. SpO2 ≤ 94% on room air

OR

. acute respiratory failure requiring supplemental oxygen or ventilatory support

Intervention/treatment	Phase
Drug: Remdesivir Drug: Lopinavir/ritonavir Drug: Interferon Beta-1A Drug: Hydroxychloroquine Other: Standard of care	Phase 3

"Solidarity" clinical trial for COVID-19 treatments

- Adults (age ≥18 years)
- recently hospitalised, or already in hospital,
- with confirmed COVID-19 and, in the view of the responsible doctor
- no contra-indication to any of the study treatments

will be randomly allocated between :

. Local standard of care,

OR local standard of care plus one of

. Remdesivir

. Chloroquine or Hydroxychloroquine

. Lopinavir with Ritonavir

. Lopinavir with Ritonavir plus Interferon beta-1a.

Conclusions

- Pas de niveau de preuves scientifiques suffisant

  ➡ **Pas de traitement spécifique pour COVID-19**

- Nombreuses **pistes très prometteuses**

  - Chloroquine/hydroxychloroquine
  - Lopinavir/r, Remdisivir
  - Anti-IL6,
  - Plasma de patients guéris

- **Mesures barrières +++**

MERCI


Service de Maladies Infectieuses
SMI
Hôpital Farhat Hached Sousse