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Efficacité du plasma convalescent chez les patients traités par Rituximab ou Ocrelizumab dans le cadre d'une maladie inflammatoire démyélinisante et souffrant d'une infection à SARS-CoV-2

Université des Antilles

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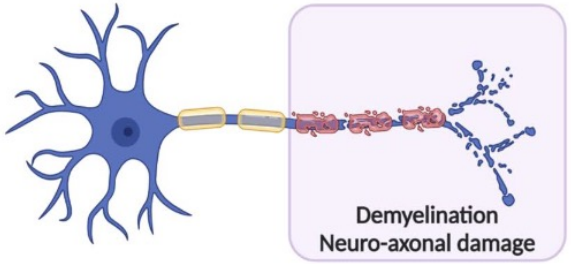
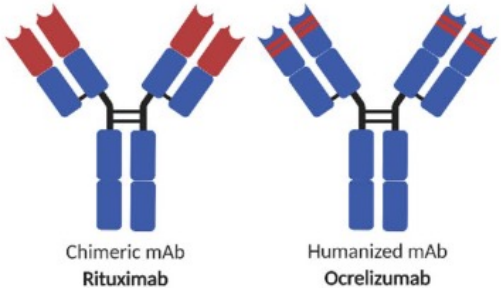
13/06/2024

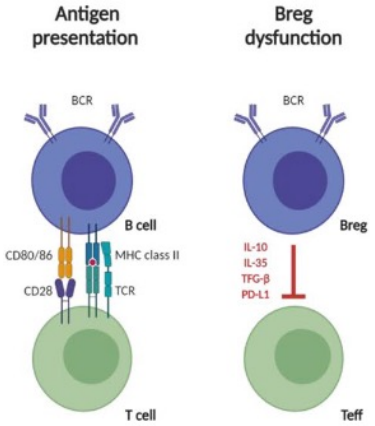
Déclaration d'intérêt de 2014 à 2023

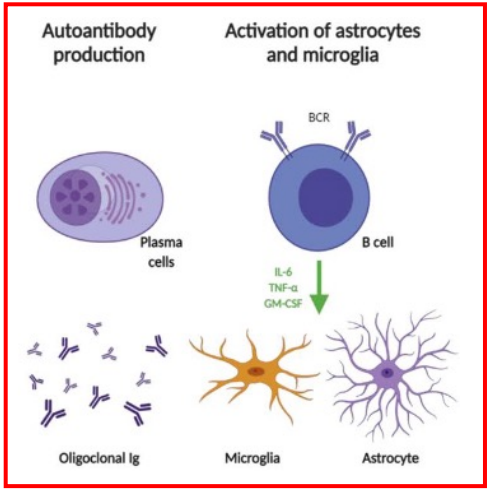
- Intérêts financiers : Aucun
- Liens durables ou permanents : Aucun
- Interventions ponctuelles : Aucun
- Intérêts indirects : Aucun



- Sclérose en plaques (SEP)
- Maladies du spectre de la neuromyélite optique (NMOSD)





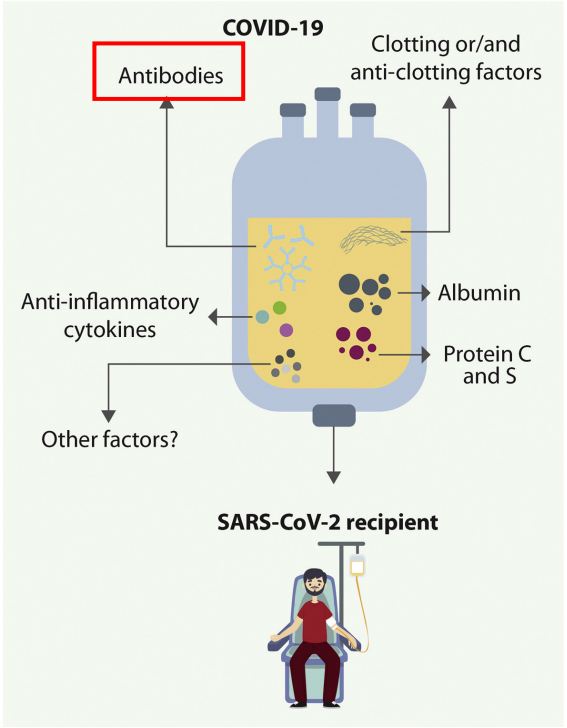


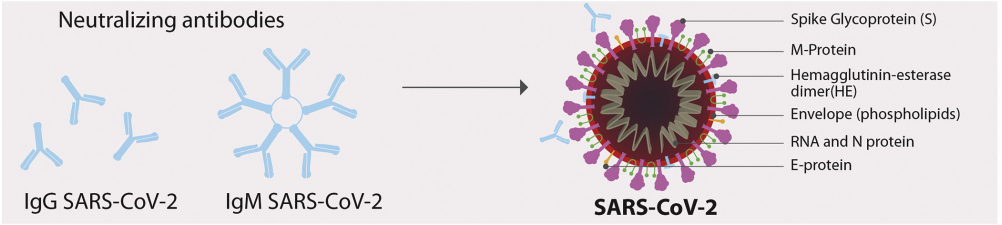
COVID-19 sévère

COVID-19 prolongée

Margoni et *al*, 2022 ; Hueso et *al*, 2022 ; Yasuda et al, 2021

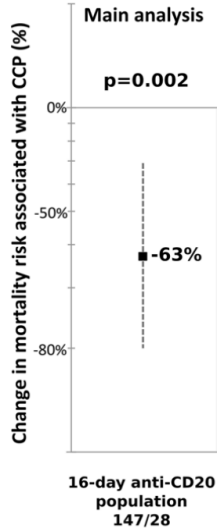
Contexte





Hématologie

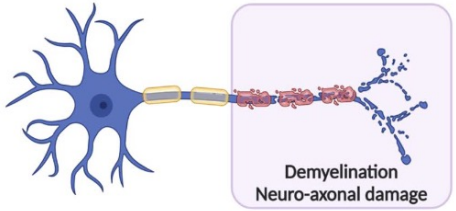
- Lymphomes B
- Anti-CD20
- PCC vs Ø PCC
- Score de propension
- HR 63% (31%-80%)



- Plasma convalescent COVID-19 (PCC)

Rojas et *al*, 2020 ; Hueso et *al*, 2022

Objectifs



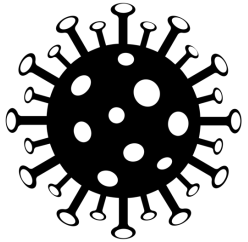
Treatment of B-cell depleted COVID-19 patients with convalescent plasma and plasma-based products

Ariel Kenig [a], Yuval Ishay [a,b], Fadi Kharouf [a,c], Limor Rubin [a,d,*]

ORIGINAL ARTICLE OPEN ACCESS Check for updates

Convalescent plasma treatment in severely immunosuppressed patients hospitalized with COVID-19: an observational study of 28 cases

- Plasma convalescent COVID-19
- SARS-CoV-2
- SEP et NMOSD
- Ac anti-CD20



Kenig et *al*, 2021 ; Ljungquist et *al*, 2022

Méthodes

- Descriptive, rétrospective, multicentrique
- Novembre 2020 - Juin 2023
- RCP PCC : SEP/NMOSD + Ac anti-CD20 + SARS-CoV-2
- Critères d'exclusion
  - ✓ Refus PCC par RCP
  - ✓ Ø PCC
  - ✓ Absence d'accès au dossier clinique
  - ✓ Refus du patient

Critères de jugement

1. Survie à J30

2.
- Clinique : Survie à J7 et J90, amélioration clinique à J7 et J30, rechute à J30 et J90
- Biologique : CRP et ferritine à J0 et J7
- Virologique : PCR respiratoire + sang à J0 et J7

- Définitions :
  - ✓ COVID-19 aigue vs prolongé : < 21 jours / ≥ 21 jours
  - ✓ Amélioration clinique : Perte de 1 point sur l'échelle OMS
  - ✓ Rechute : Réhospitalisation pour COVID-19 prouvée

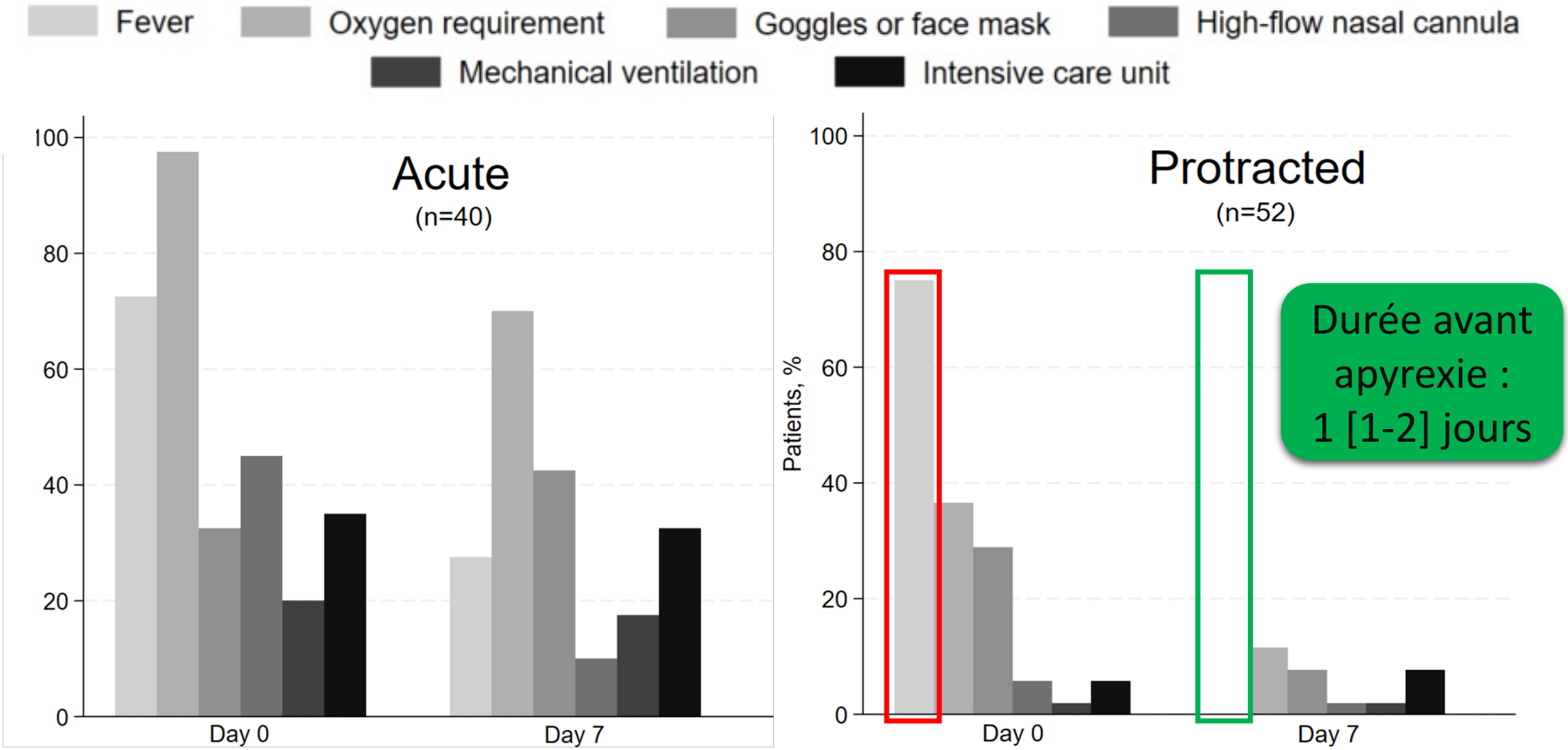
Characteristics	Total (n = 92)	Acute (n = 40)	Protracted (n = 52)
Age, *years*	49 [42-58]	50 [43-59]	48 [38-54]
Female	61 (66)	27 (67)	34 (65)
Body mass index	24 [21-28]	25 [24-31]	23 [20-26]
Obesity	17 (18)	10 (25)	7 (13)
Hypertension	9 (10)	3 (7)	6 (11)
Charlson comorbidity index	1 [0-2]	1 [0-2]	1 [0-2]
IDDs			
Multiple sclerosis	84 (91)	38 (95)	46 (88)
Neuromyelitis optica spectrum disorders	8 (9)	2 (5)	6 (12)
Time from MS or NMOSD diagnosis to COVID-19, *year*	13 [8-20]	16 [8-19]	13 [6-22]
Multiple sclerosis subtype			
Relapsing-remitting	32 (38)	12 (32)	20 (44)
Secondary progressive	36 (43)	18 (47)	18 (39)
Primary progressive	16 (19)	8 (21)	8 17)
EDSS score	4.5 [3-6]	5.5 [4-6]	4 [2-6.5]
Prior DMT use (before anti-CD20)			
Natalizumab	29 (31)	10 (25)	19 (36)
Fingolimod	22 (24)	8 (32)	14 (27)
Mitoxantrone	6 (6)	4 (10)	2 (4)
Cyclophosphamide	10 (11)	4 (10)	6 (11)
Azathioprine	8 (9)	5 (12)	3 (6)
Mycophenolate mofetil	6 (6)	2 (5)	4 (8)
Others*	46 (50)	21 (52)	25 (48)
Anti-CD20 agent			
Rituximab	56 (61)	26 (65)	30 (58)
Ocrelizumab	36 (39)	14 (35)	22 (42)

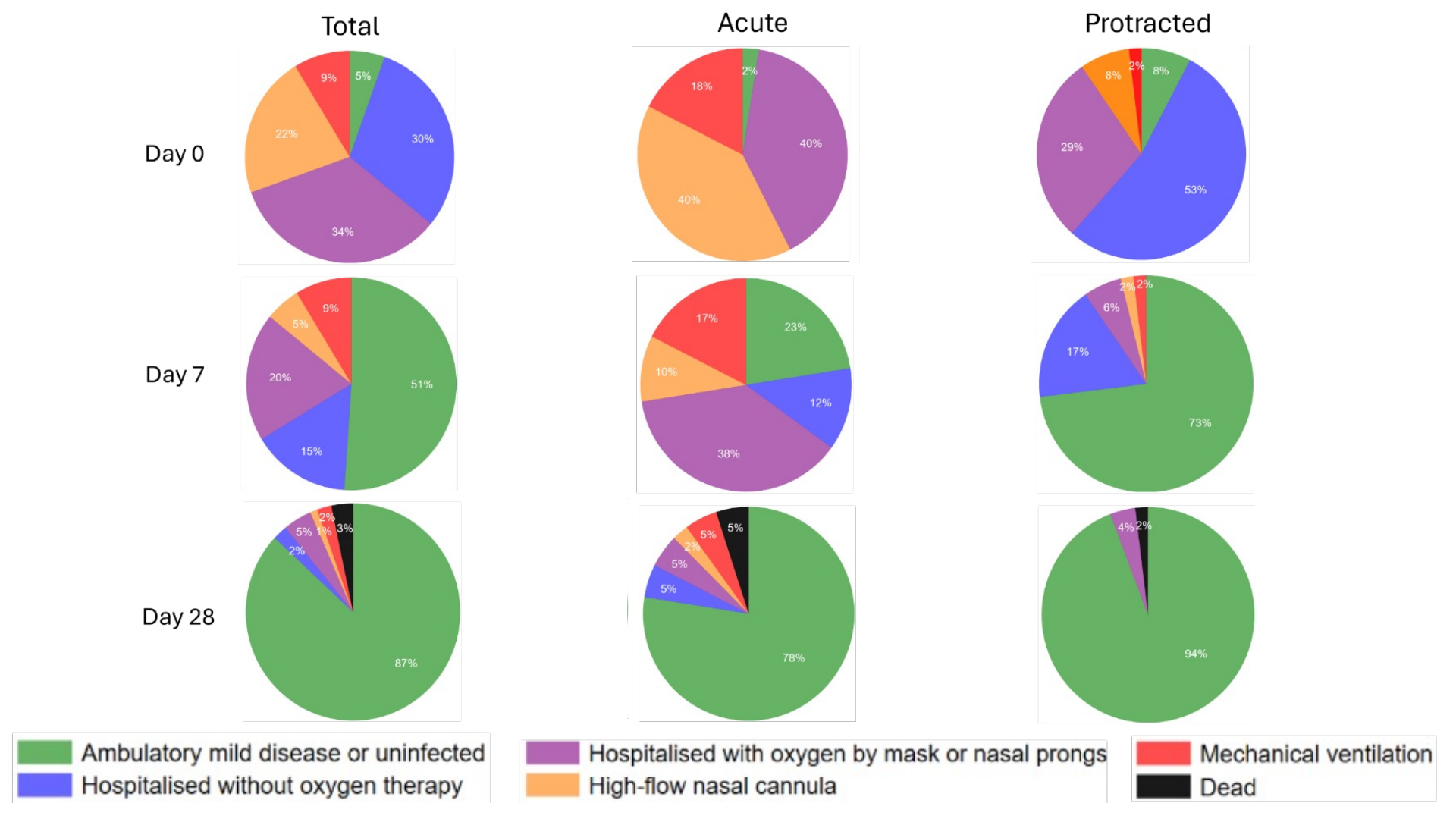
Characteristics	Total (n = 92)	Acute (n = 40)	Protracted (n = 52)
Time from anti-CD20 start to COVID-19, *years*	4 [3-5]	4 [3-5]	4 [3-6]
Time from last anti-CD20 infusion to COVID-19, *days*	127 [74-187]	113 [72-177]	132 [89-191]
Vaccination against SARS-CoV-2	57 (62)	25 (62)	32 (61)
Number of vaccine doses received	3 [2-4]	3 [2-3]	3 [2-4]
SARS-CoV-2 serostatus before CCP			
Positive	8 (9)	1 (2)	7 (13)
Negative	75 (81)	35 (88)	40 (77)
Unknown	9 (10)	4 (10)	5 (10
Specific treatments for COVID-19 prior to CCP			
Corticotherapy	61 (66)	34 (85)	27 (52)
Tocilizumab	4 (4)	3 (7)	1 (2)
Baricitinib	0 (0)	0 (0)	0 (0)
Remdesivir	6 (6)	1 (2)	5 (10)
Nirmatrelvir	1 (1)	0 (0	1 (2)
Anti-Spike monoclonal antibodies	5 (5)	3 (7)	2 (4)
Cilgavimab/Tixagevimab (prophylactic therapy)	3 (3)	1 (2)	2 (4)
Casirivimab/Imdevimab (curative therapy)	2 (2)	2 (5)	0 (0)
Variant			
D614G	8 (9)	1 (3)	7 (13)
Alpha	7 (8)	2 (5)	5 (10)
Beta	2 (2)	2 (5)	0 (0)
Delta	12 (13)	9 (22)	3 (6)
Omicron	29 (31)	11 (28)	18 (35)
Others	3 (3)	2 (5)	1 (2)
Unknown	31 (34)	13 (32)	18 (34)
Time from COVID-19 symptoms onset to CCP, *days*	26 [16-55]	15 [10-20]	51 [28-69]

Max. 184 jours
≈ 6 mois

Variables	Total (n = 92)	Acute (n = 40)	Protracted (n = 52)
Clinical status 7 days after CCP			
Clinical improvement	71 (77)	27 (67)	44 (85)
Respiratory worsening	13 (14)	9 (22)	4 (8)
Overall mortality	0 (0)	0 (0)	0 (0)
Clinical status 30 days after CCP			
Clinical improvement	86 (93)	35 (87)	51 (98)
COVID-19 relapses	1 (1)	0 (0)	1 (2)
Overall mortality	3 (3)	2 (5)	1 (2)
COVID-19 relapses between 30 and 90 days	1 (1)	1 (2)	0 (0)
90-day overall mortality	5 (5)	4 (10)	1 (2)
Time between CCP and death, *days*	21 [13-39]	26 [10-41]	21 [21-21]

Evolution clinique




Total
Acute
Protracted
Day 0
Day 7
Day 28
9%
5%
22%
30%
34%
2%
18%
40%
40%
8%
8%
2%
29%
53%
9%
5%
20%
51%
15%
17%
23%
10%
12%
38%
2%
2%
6%
17%
73%
2%
5%
1%
3%
2%
87%
5%
2%
5%
5%
5%
78%
4%
2%
94%
Ambulatory mild disease or uninfected
Hospitalised without oxygen therapy
Hospitalised with oxygen by mask or nasal prongs
High-flow nasal cannula
Mechanical ventilation
Dead

Evolution biologique et virologique

Variables	Acute (n = 40)	Protracted (n = 52)	*p* value
Biological parameters prior to CCP			
CRP (mg/L)	84 [60-155]	53 [40-116]	**.022**
Ferritin (ng/mL)	1574 [2723-2668]	732 [418-1446]	**.010**
SARS-CoV-2 RT-PCR results prior to CCP			
Respiratory sample Ct	22 [19-25]	29 [29-32]	**<.001**
Viremia	23/35 (66)	23/40 (57)	.466
Blood sample Ct	32 [28-35]	35 [33-37]	**.040**
Biological parameters 7 days after CCP			
CRP	20 [10-52]	8 [4-18]	**.002**
Ferritin	1192 [772-2314]	760 [391-1154]	**.012**
CRP halved	22/30 (67)	32/42 (76)	.362
Ferritin halved	8/21 (38)	7/17 (29)	.562
SARS-CoV-2 RT-PCR results7 days after CCP			
Respiratory sample Ct	30 [25-34]	30 [27-33]	.959
Viremia	6/24 (25)	3/35 (9)	.139
Blood sample Ct	35 [31-38]	40 [40-40]	.400

Forces et limites

1 PCC / SEP-NMOSD / Anti-CD20

Homogénéité

NMOSD

Analyse en sous-groupes

Rétrospectif

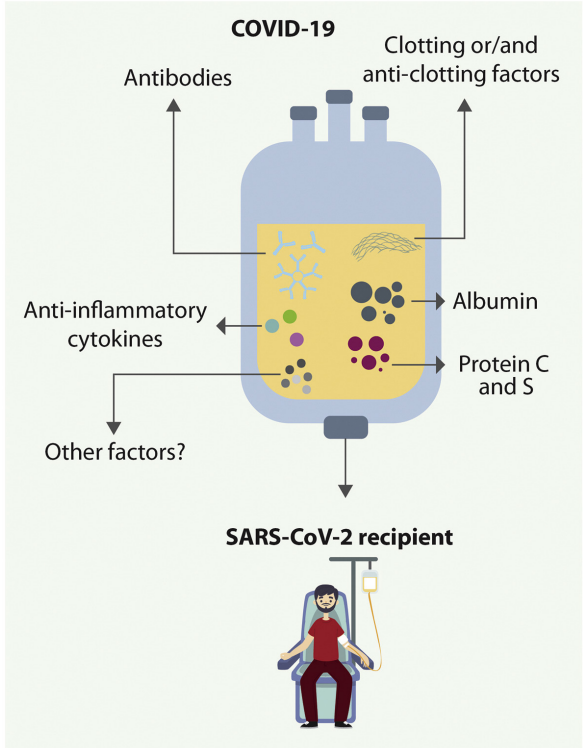
Ø contrôle

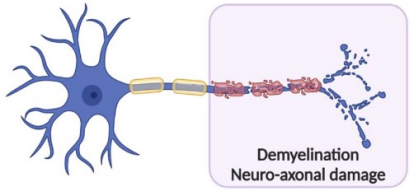
Réanimation

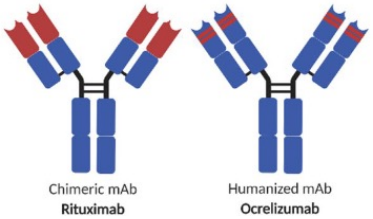
Origine du prélèvement respiratoire

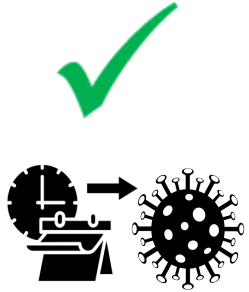
Da Silva et *al*, 2023

Conclusions et perspectives









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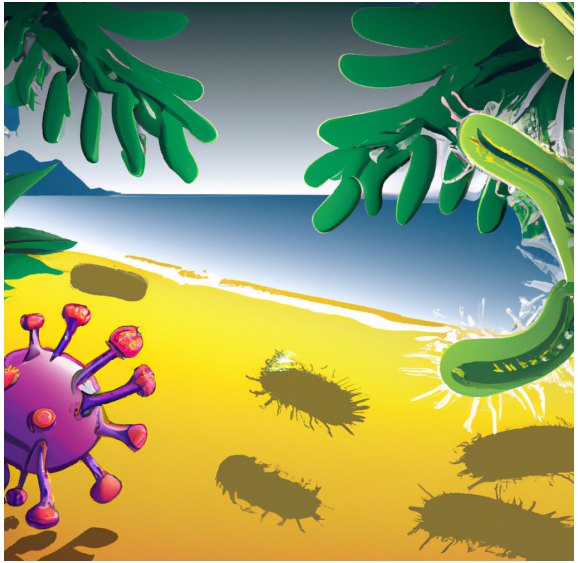
Antiviraux directs

?

Quentin Richier, **Céline Louapre**, **Florence Ader**, Yanis Merad, Nicolas Lauwerier, Christine Jacomet, Michel Carles, Charlotte Biron, Vincent Gendrin, Clément Marlat, François Danion, Tristan Lepage, Albert Sotto, Loïc Bourdellon, Alexandre Mania, Martin Martinot, Georges Le Falher, Alexis Ferre, Benoit Pilmis, Guillaume Gondran, Pierre Simeone, Matthieu Henry, Toufik Kamel, Simon Ray, Sophie Ancellin, Nicolas Mélé, Fabrice Camou, Marjolaine Destremau, Jeremy Sellenet, Noémie Zucman, Marion Le Marechal, Khawla Mellouki, Marie-Elodie Langlois, David Luque Paz, Maud Mousset, Catherine Leclerc, Agnès Sommet, **Karine Lacombe**, **Guillaume Martin-Blondel**



Merci de votre attention