



Centre
Hospitalier
de Bastia



SOCIÉTÉ
DE RÉANIMATION
DE LANGUE FRANÇAISE



AER
ACTUALITÉS EN RÉANIMATION

Que retenir de 2022 ?
SDRA



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UNIVERSITÀ
DI CORSICA

Conflicts of interest

- Fees and/or travel expenses
 - Air Liquide Santé
 - Maquet
 - Drager
 - GE
 - Faron
 - GSK
 - Covidien
 - Janssen
 - Orion
 - Johnson & Johnson
 - Peninsula Pharma

1. Cible

2. Effort

3. Signalisation

4. Familiarité

SpO₂/PaO₂ cible ?

Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure

N ENGL J MED 384;14 NEJM.ORG APRIL 8, 2021

O.L. Schjørring, T.L. Klitgaard, A. Perner, J. Wetterslev, T. Lange, M. Siegemund, M. Bäcklund, F. Keus, J.H. Laake, M. Morgan, K.M. Thormar, S.A. Rosborg, J. Bisgaard, A.E.S. Erntgaard, A.-S.H. Lynnerup, R.L. Pedersen, E. Crescioli, T.C. Gielstrup, M.T. Behzadi, L.M. Poulsen, S. Estrup, J.P. Laigaard, C. Andersen, C.B. Mortensen, B.A. Brand, J. White, I.-L. Jarnvig, M.H. Møller, L. Quist, M.H. Bestle, M. Schönemann-Lund, M.K. Kamper, M. Hindborg, A. Hollinger, C.E. Gebhard, N. Zellweger, C.S. Meyhoff, M. Hjort, L.K. Bech, T. Grøfte, H. Bundgaard, L.H.M. Østergaard, M.A. Thyø, T. Hildebrandt, B. Uslu, C.G. Sølling, N. Møller-Nielsen, A.C. Brøchner, M. Borup, M. Okkonen, W. Dieperink, U.G. Pedersen, A.S. Andreasen, L. Buus, T.N. Aslam, R.R. Winding, J.C. Schefold, S.B. Thorup, S.A. Iversen, J. Engstrøm, M.-B.N. Kjær, and B.S. Rasmussen, for the HOT-ICU Investigators*

- 35 ICUs
- Denmark, Switzerland, Finland, the Netherlands, Norway, the United Kingdom, and Iceland

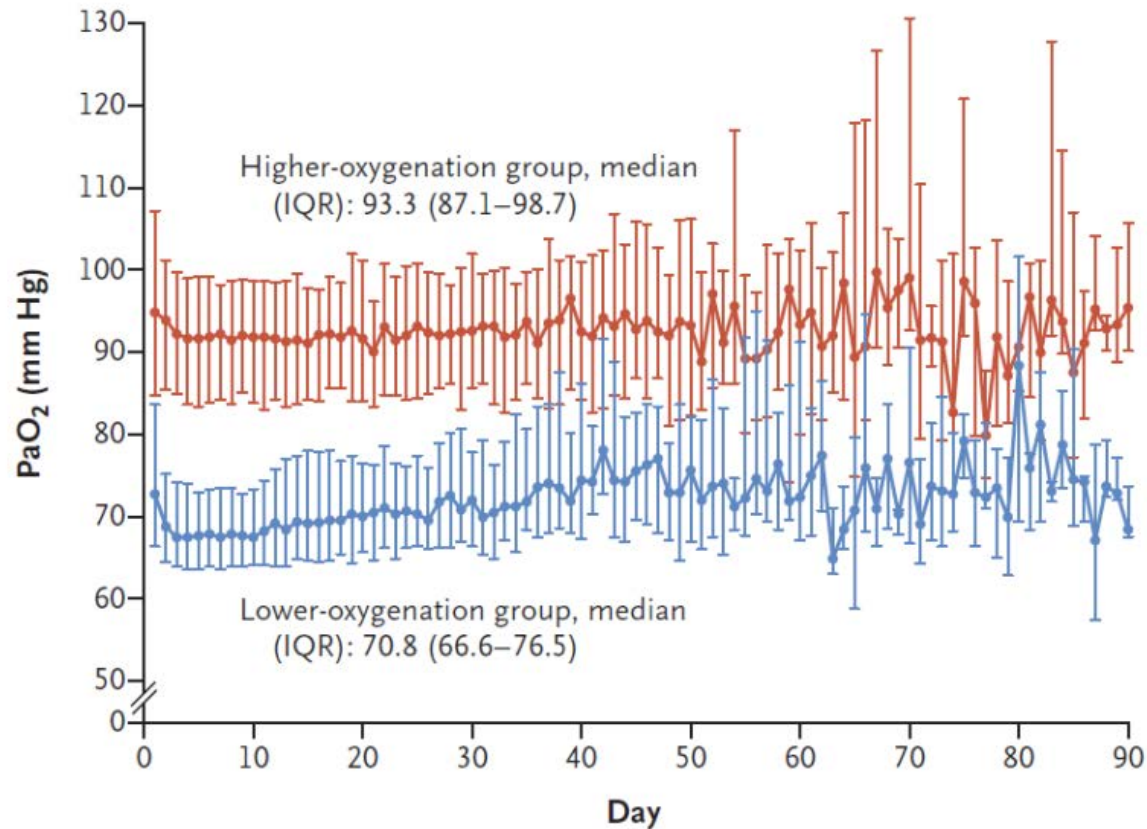
- **Hypothèse**
 - PaO₂ cible de 60 mmHg réduirait la mortalité à J90 par rapport à PaO₂ cible à 90 mmHg
- **Population: patients de réanimation présentant une insuffisance respiratoire hypoxémique**
 - ≥ 10 l/min O₂ ou FiO₂ ≥ 0.5

Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure

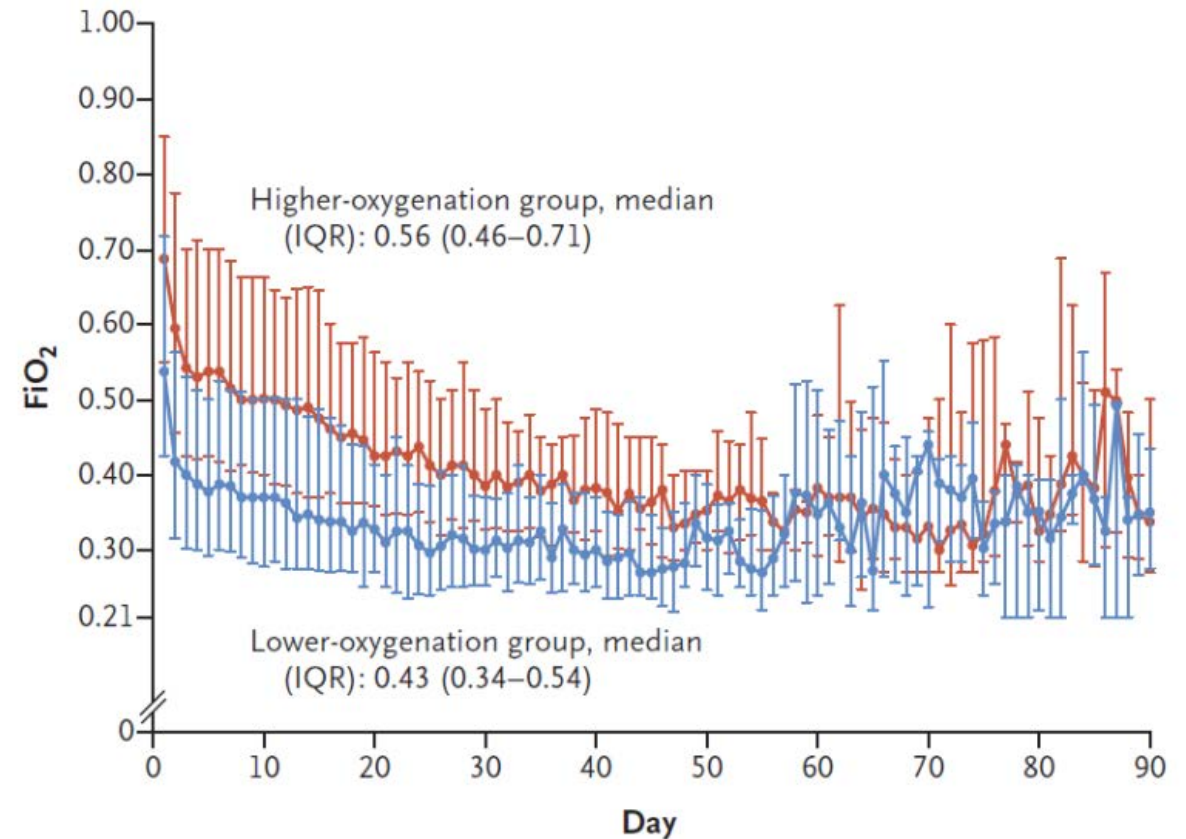
Characteristic	Lower-Oxygenation Group (N = 1453)	Higher-Oxygenation Group (N = 1457)
Acute illness — no. (%)		
Pneumonia	838 (57.7)	836 (57.4)
Multiple trauma	24 (1.7)	29 (2.0)
Hemorrhagic or ischemic stroke	25 (1.7)	22 (1.5)
Traumatic brain injury	9 (0.6)	15 (1.0)
Myocardial infarction	84 (5.8)	99 (6.8)
Intestinal ischemia	27 (1.9)	41 (2.8)
Cardiac arrest	149 (10.3)	186 (12.8)
ARDS	178 (12.3)	195 (13.4)
Invasive ventilation		
Patients — no. (%)	834 (57.4)	870 (59.7)
Median tidal volume (IQR) — ml	499 (429–582)	499 (426–561)
Median end-expiratory pressure (IQR) — cm of water	9 (7–10)	10 (7–10)
Median peak pressure (IQR) — cm of water	25 (20–29)	25 (21–30)
Noninvasive ventilation or CPAP		
Patients — no. (%)	199 (13.7)	176 (12.1)
Median end-expiratory pressure (IQR) — cm of water	8 (6–9)	7 (5–8)
Open system — no. (%)	420 (28.9)	411 (28.2)

Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure

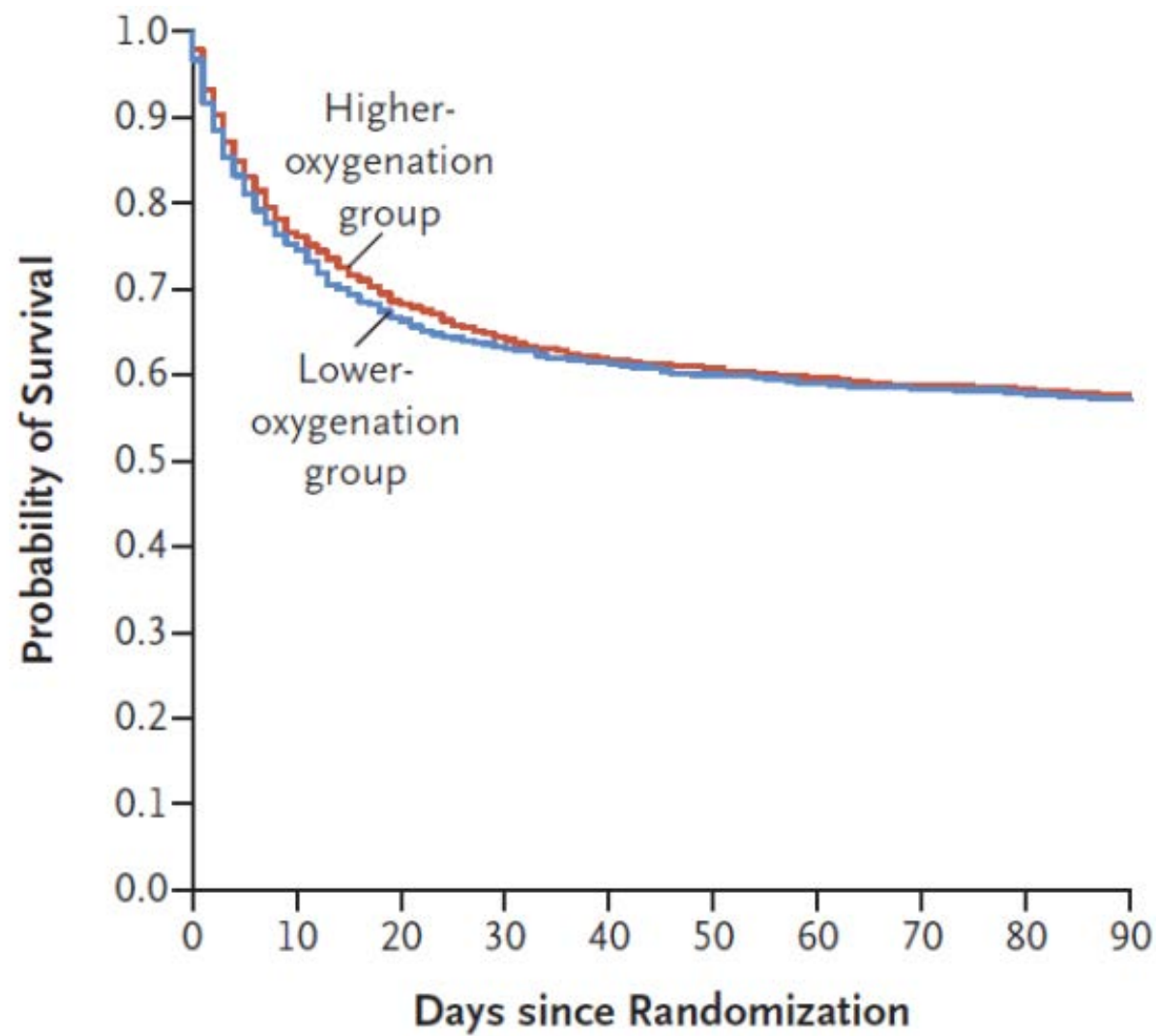
A Partial Pressure of Arterial Oxygen



B Fraction of Inspired Oxygen



Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure



Outcome	Lower-Oxygenation Group	Higher-Oxygenation Group
Primary outcome†		
Death by day 90 — no./total no. (%)	618/1441 (42.9)	613/1447 (42.4)
Secondary outcomes¶		
Median percentage of days alive without life support (IQR)	87.8 (0.0–96.7)	84.4 (0.0–96.0)
Median percentage of days alive after hospital discharge (IQR)	55.6 (0.0–85.6)	50.0 (0.0–84.4)
Serious adverse events — no./total no. (%)	525/1453 (36.1)	555/1457 (38.1)
Shock	492/1453 (33.9)	521/1457 (35.8)
Myocardial ischemia	14/1453 (1.0)	8/1457 (0.5)
Ischemic stroke	19/1453 (1.3)	23/1457 (1.6)
Intestinal ischemia	32/1453 (2.2)	29/1457 (2.0)

Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure

Table S2. ICU interventions.*

Characteristic	Lower Oxygenation Group (N = 1453)	Higher Oxygenation Group (N = 1457)
Number of arterial blood gas samples per day	6±2	6±2
Mechanical ventilation – no. (%)	1288 (88.6)	1311 (90.0)
Invasive ventilation – no. (%)†	994 (68.4)	1037 (71.2)
Non-invasive ventilation or CPAP – no. (%)†	203 (14.0)	238 (16.3)
Prone position – no. (%)	71 (4.9)	96 (6.6)
Inhaled vasodilators – no. ‡	50 (3.4)	74 (5.1)
ECMO – no. (%)	13 (0.9)	13 (0.9)

Lower or Higher Oxygenation Targets for Acute Hypoxemic Respiratory Failure

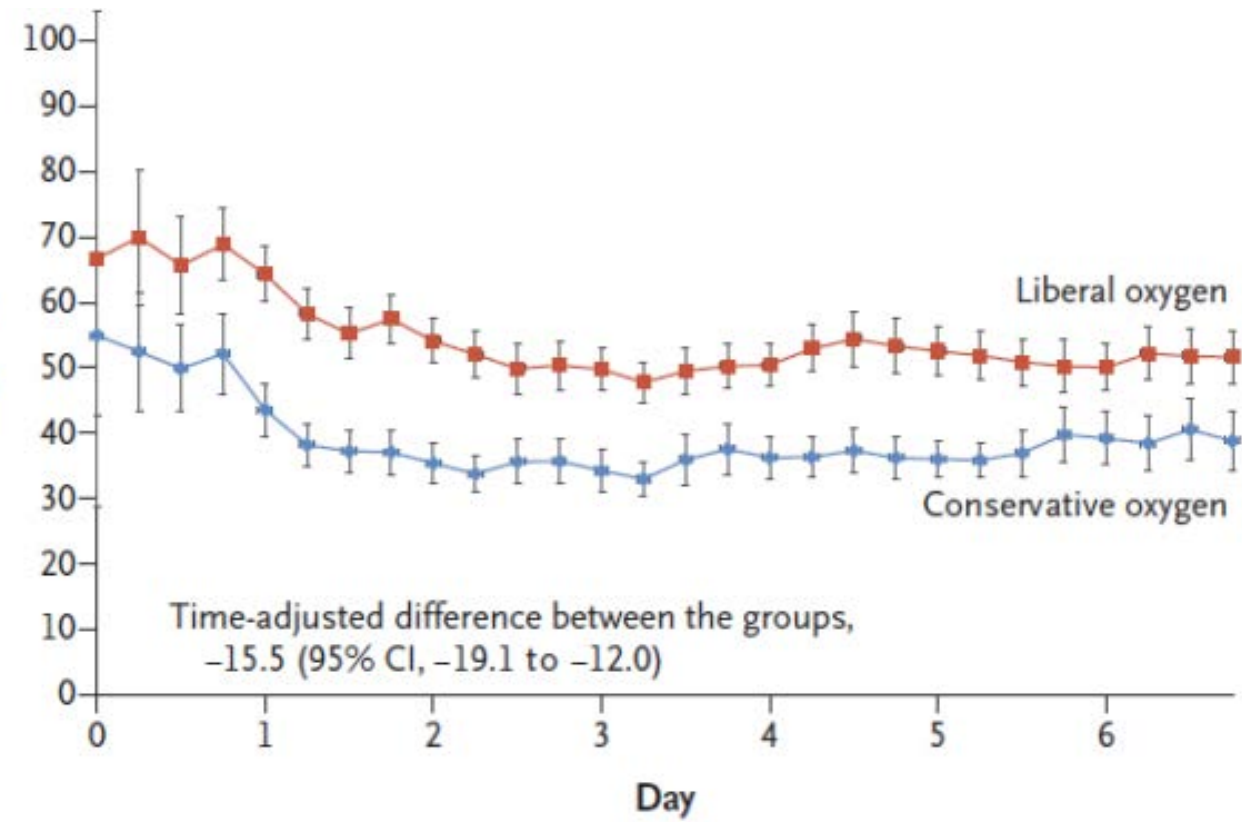
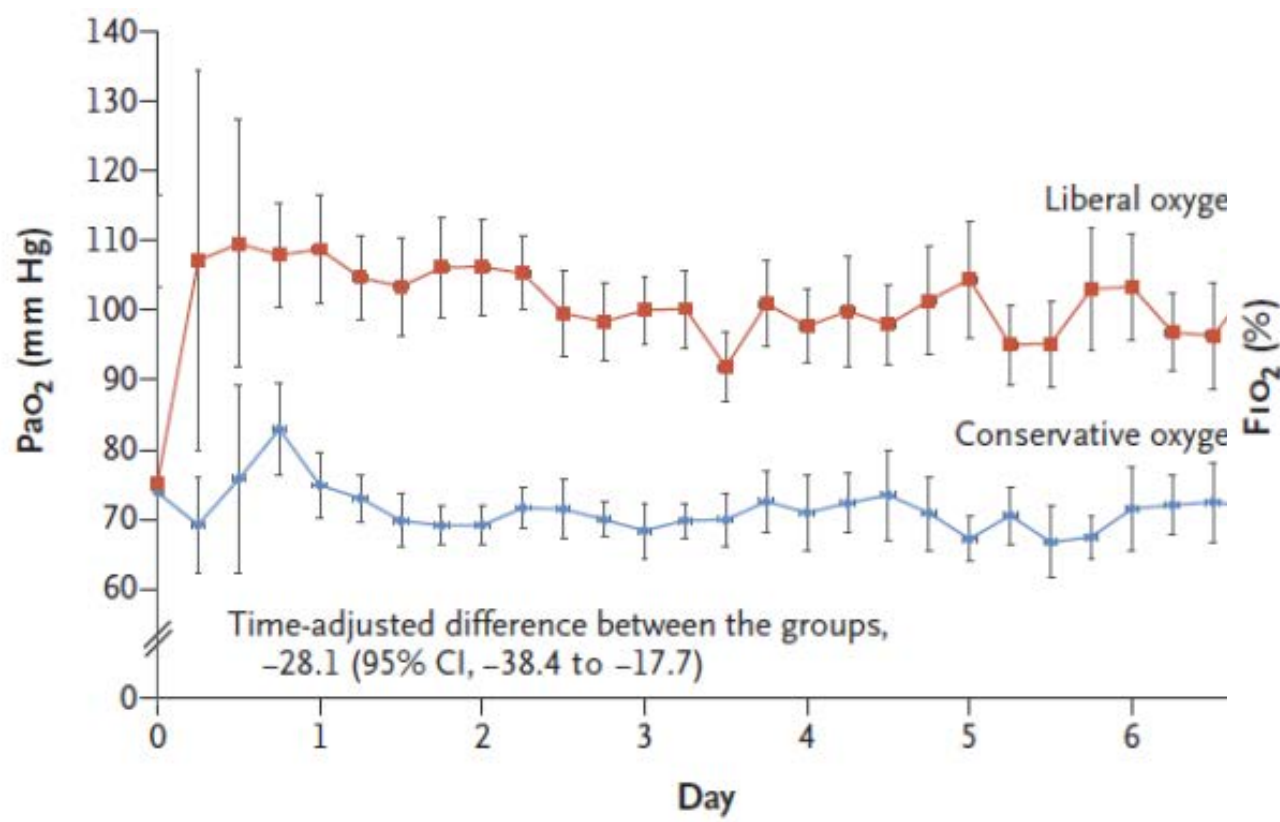
Characteristic	Lower Oxygenation Group	Higher Oxygenation Group	Risk Ratio (95% CI) [†]	Risk Difference (95% CI) [†]
Shock, no. of events/no. of patients in subgroup (%) [‡]				
Yes [§]	244/427 (57.1)	219/412 (53.2)	1.07 (0.95–1.21)	3.54 (-3.12–10.20)
No [¶]	374/1014 (36.9)	394/1035 (38.1)	0.97 (0.87–1.08)	-1.61 (-5.83–2.60)
Invasive ventilation, no. of events/no. of patients in subgroup (%)				
Yes [¶]	380/826 (46.0)	378/863 (43.8)	1.07 (0.97–1.19)	2.42 (-2.26–7.10)
No [¶]	238/615 (38.7)	235/584 (40.2)	0.95 (0.83–1.09)	-1.32 (-7.00–4.34)

Liberal or Conservative Oxygen Therapy for Acute Respiratory Distress Syndrome

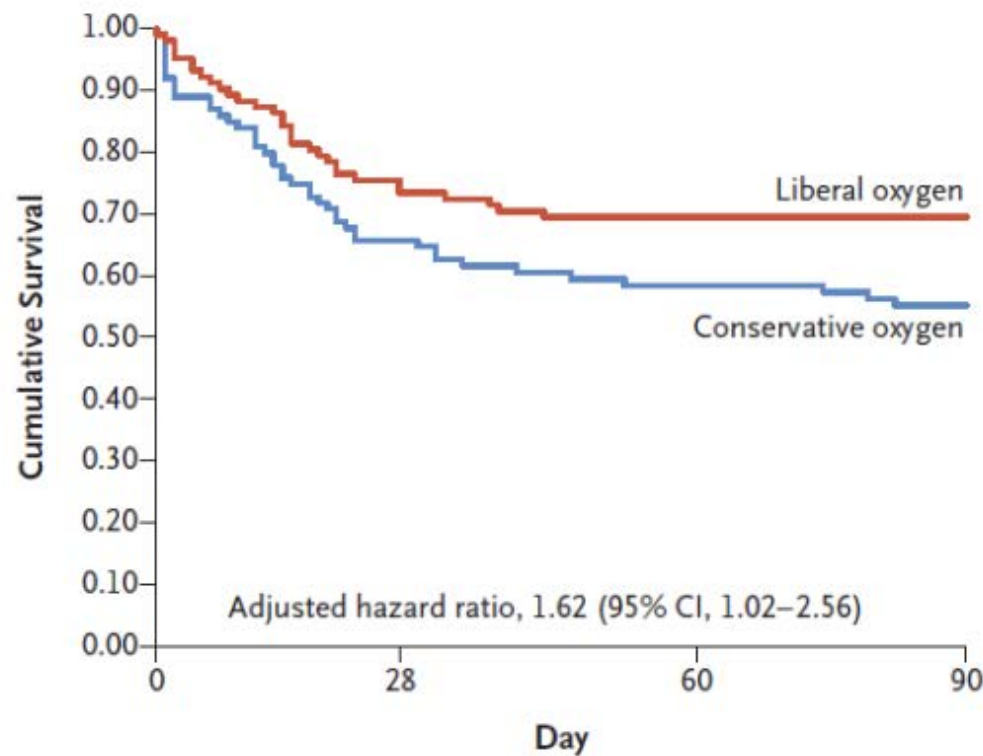
Loic Barrot, M.D., Pierre Asfar, M.D., Ph.D., Frederic Mauny, M.D., Ph.D.,
Hadrien Winiszewski, M.D., Florent Montini, M.D., Julio Badie, M.D.,
Jean-Pierre Quenot, M.D., Ph.D., Sebastien Pili-Floury, M.D., Ph.D.,
Belaid Bouhemad, M.D., Ph.D., Guillaume Louis, M.D.,
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Julien Pottecher, M.D., Ph.D., Bruno Levy, M.D., Ph.D., Marc Puyraveau, M.Sc.,
Lucie Vettoretti, Ph.D., Jean-Michel Constantin, M.D., Ph.D.,
and Gilles Capellier, M.D., Ph.D., for the LOCO₂ Investigators
and REVA Research Network*

- SDRA
- "conservative oxygen therapy": cible PaO₂ 55-70 mmHg / SpO₂ 88-92%
- "stratégie libérale": cible PaO₂ 90-105 mmHg / SpO₂ ≥ 96%
- Pendant 7 jours
- Stratégie VM identique
- Mortalité à J28

Liberal or Conservative Oxygen Therapy for Acute Respiratory Distress Syndrome



Liberal or Conservative Oxygen Therapy for Acute Respiratory Distress Syndrome



No. at Risk				
Liberal oxygen	102	74	69	63
Conservative oxygen	99	64	55	45

Table 2. Outcomes.				
Variable	Conservative Oxygen (N = 99)		Liberal Oxygen (N = 102)	
	no./total no.	% (95% CI)	no./total no.	% (95% CI)
Death				
At day 28	34/99	34.3 (25.0–43.7)	27/102	26.5 (17.9–35.0)
In the ICU	36/99	36.4 (26.9–45.8)	27/102	26.5 (17.9–35.0)
At day 90	44/99	44.4 (34.7–54.2)	31/102	30.4 (21.5–39.3)
Mesenteric ischemia	5/99	5.1 (1.7–11.4)	0/102	
Cardiac adverse events				
Arrhythmia	23/99	23.2 (14.9–31.6)	16/102	15.7 (8.6–22.7)
New-onset atrial fibrillation	21/99	21.2 (13.2–29.3)	13/102	12.7 (6.3–19.2)
Events leading to treatment	23/99	23.2 (14.9–31.6)	14/102	13.7 (7.0–20.4)

This article was published on October 24, 2022, at NEJM.org.

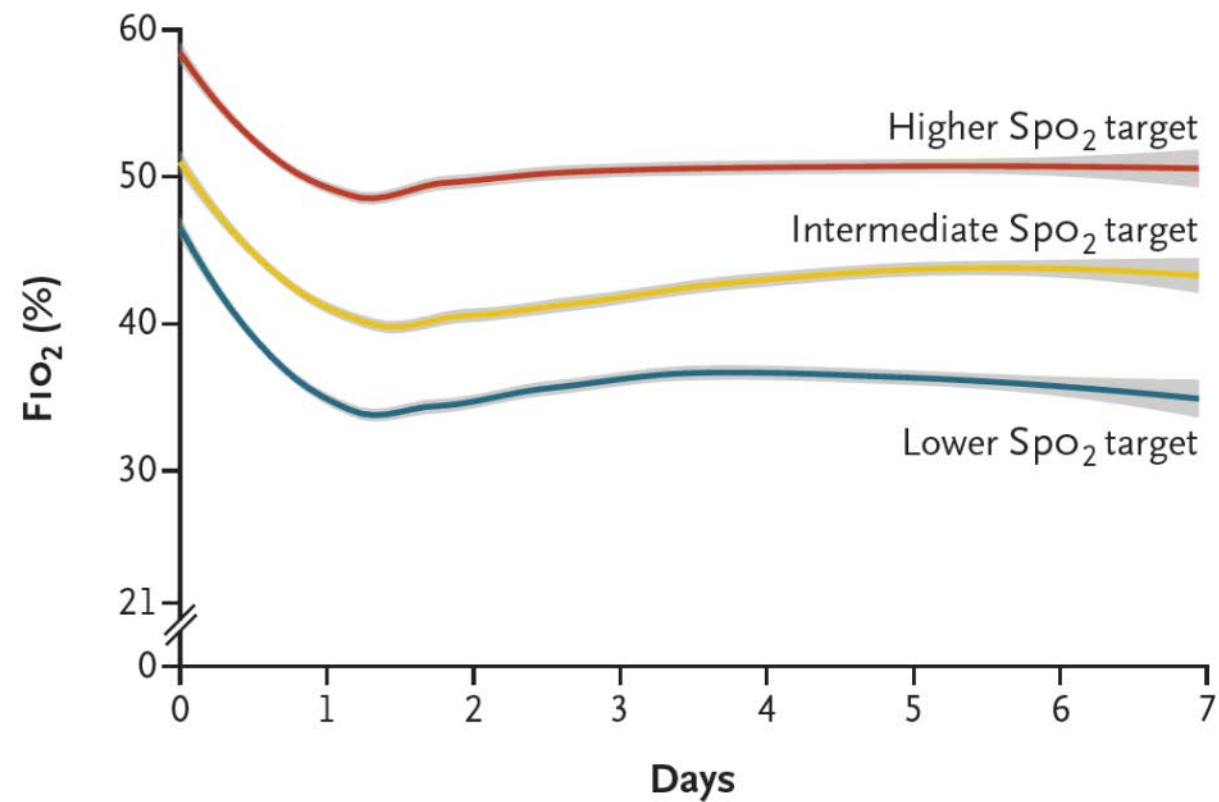
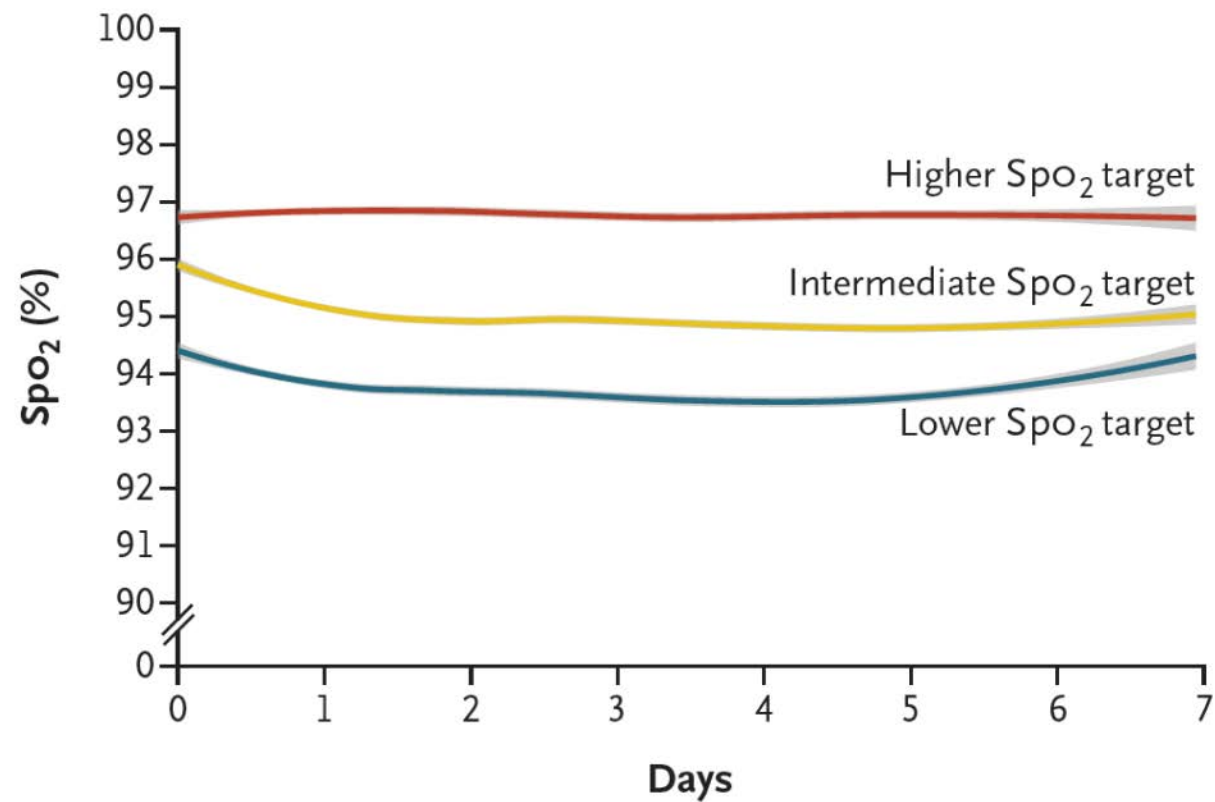
Oxygen-Saturation Targets for Critically Ill Adults Receiving Mechanical Ventilation

Matthew W. Semler, M.D., Jonathan D. Casey, M.D.,
Bradley D. Lloyd, R.R.T.-A.C.C.S., Pamela G. Hastings, R.R.T.-A.C.C.S.,
Margaret A. Hays, R.N., Joanna L. Stollings, Pharm.D., Kevin G. Buell, M.B., B.S.,
John H. Brems, M.D., Edward T. Qian, M.D., Kevin P. Seitz, M.D., Li Wang, M.S.,
Christopher J. Lindsell, Ph.D., Robert E. Freundlich, M.D.,
Jonathan P. Wanderer, M.D., Jin H. Han, M.D., Gordon R. Bernard, M.D.,
Wesley H. Self, M.D., M.P.H., and Todd W. Rice, M.D., for the PILOT
Investigators and the Pragmatic Critical Care Research Group*

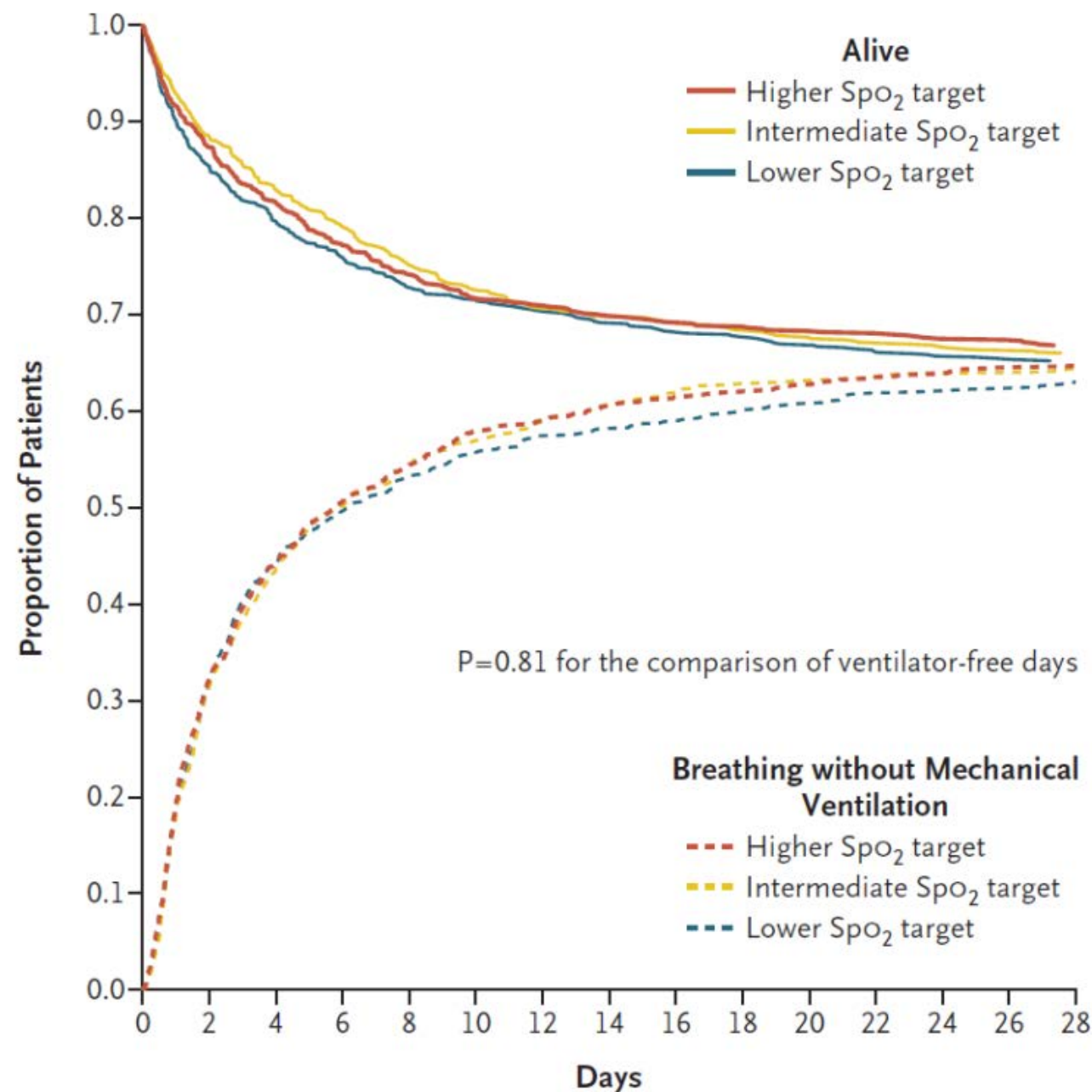
- **Monocentrique (1 SAU + réa med)**
- **Malades sous VM invasive**
- **3 groupes selon SpO₂**
 - lower target (90%; goal range, 88 to 92%)
 - intermediate target (94%; goal range, 92 to 96%)
 - higher target (98%; goal range, 96 to 100%)

Figure S1. Group assignment during the trial.

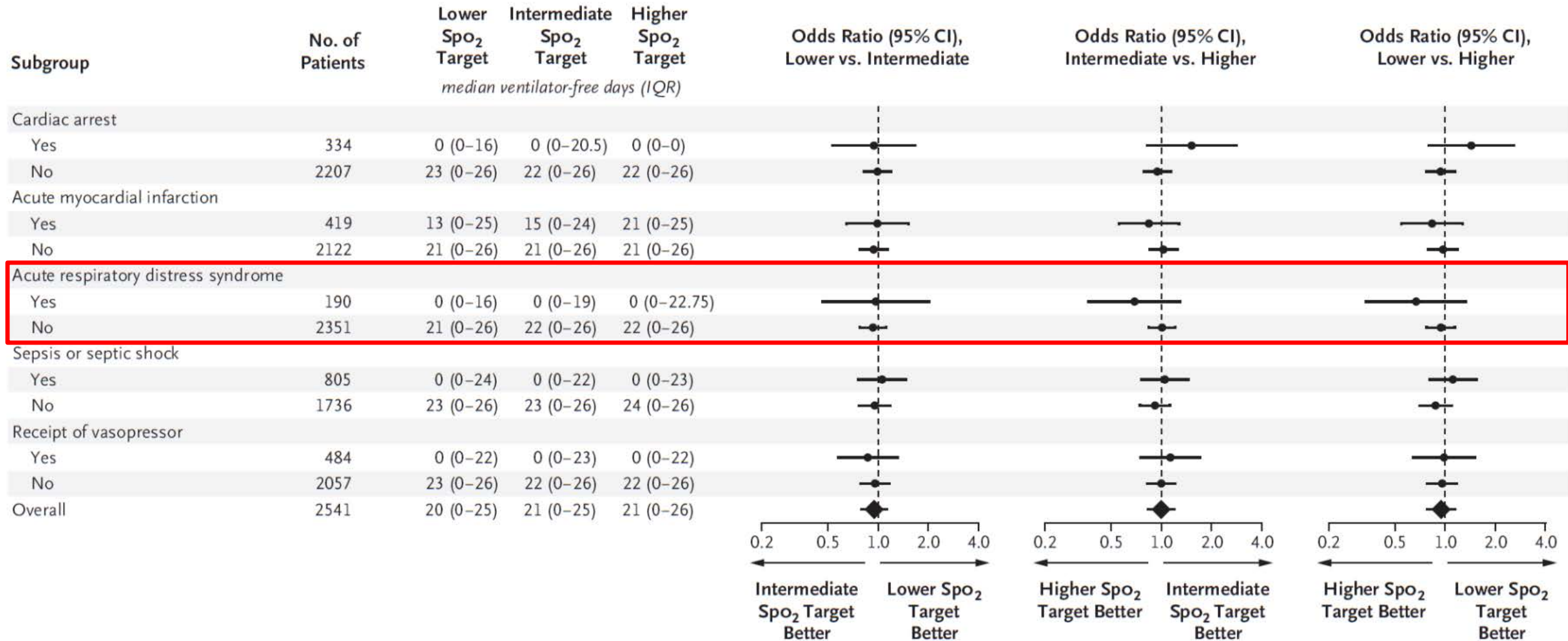
Study Year 1						Study Year 2						Study Year 3					
Jul-Aug	Sep-Oct	Nov-Dec	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Nov-Dec	Jan-Feb	Mar & Jun	Jul-Aug	Sept-Oct	Nov-Dec	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug
2018			2019					2020				2021					
A	B	C	B	C	A	C	B	A	A	B	C	B	A	C	B	A	C



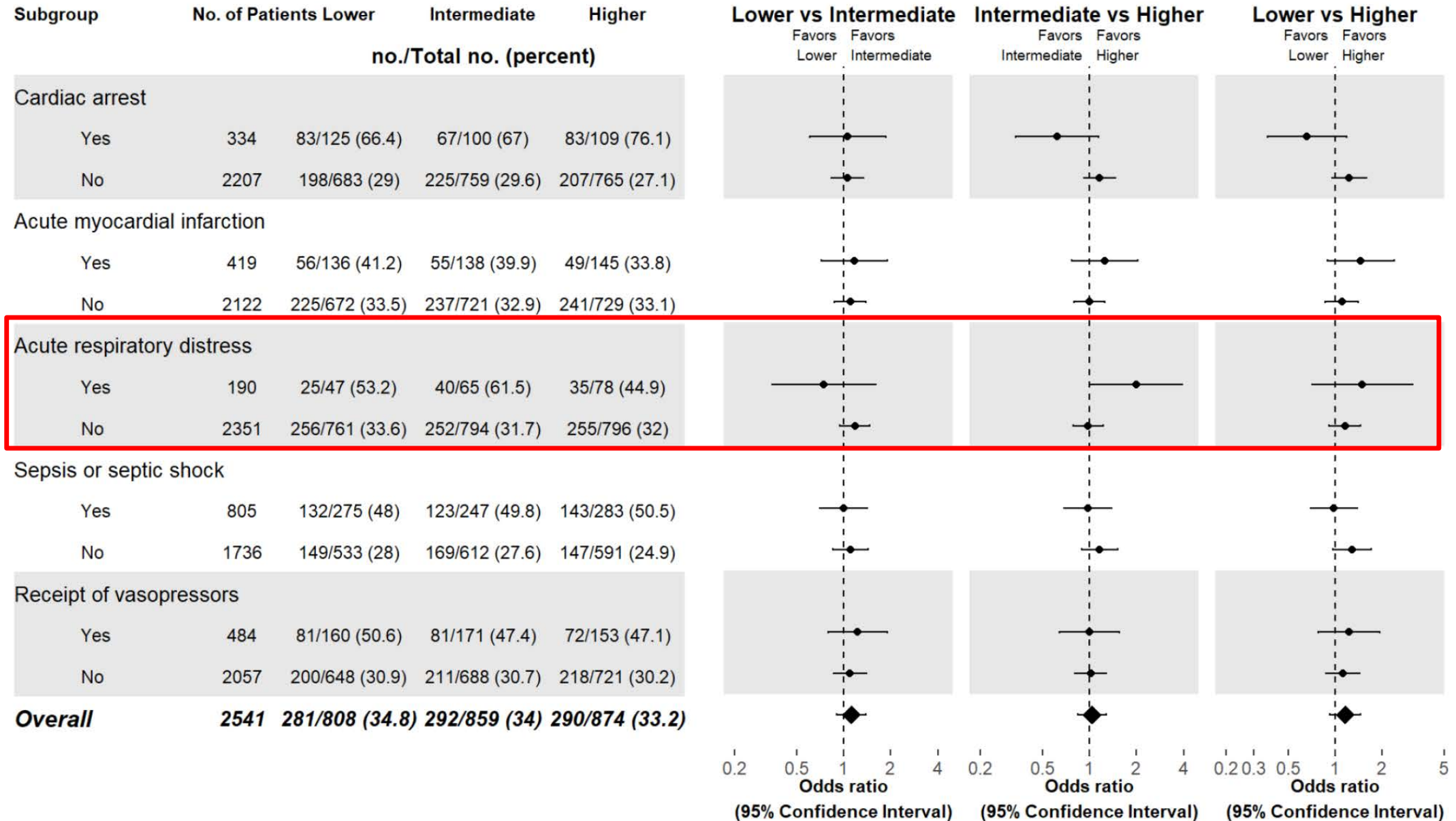
Proportion de patients vivants et sevrés de la ventilation mécanique invasive



Ventilator-free days through day 28



Mortalité hospitalière J28



Trial characteristic	PILOT	HOT-ICU ⁶	ICU-ROX ⁵	Oxygen-ICU ³	O ₂ -ICU ⁷	LOCO-2 ⁴
Number of participants						
Total	2,541	2,910	965	434	400	201
Mechanically ventilated at enrollment	2,541	1,704	965	291	295	201
Time-to-enrollment	At initiation of ventilation in ED or ICU	Median of 4 hours after ICU admission	After ICU admission, median of 3 hours after initiation of ventilation	At ICU admission	Median of 4 hours after ICU admission	After ICU admission, exact interval not reported
Target						
Primary target (SpO ₂ vs PaO ₂)	SpO ₂	PaO ₂	SpO ₂	PaO ₂	PaO ₂	PaO ₂
SpO ₂ target in lower target group* - %	90%	Approximately 90%	91-96%	94-98%	Approximately 90-97%	88-92%
SpO ₂ target in higher target group* - %	98%	Approximately 97%	91-100%	97-100%	Approximately 98-100%	96-100%
PaO ₂ target in lower target group - mmHg	60	60	60	70-100	60-90	55-70
PaO ₂ target in higher target group - mmHg	110	90	Not reported	<150	105-135	90-105
Oxygenation achieved						
Median SpO ₂ in lower target group [†] - %	94%	93%	Not reported	Not reported	96%	Approximately 93%
Median SpO ₂ in higher target group [†] - %	97%	96%	Not reported	Not reported	97%	Approximately 97%
Difference between groups - %	-3%	-3%	Not reported	Not reported	-1%	-3.8%
Median FiO ₂ in lower target group [†]	0.31	0.43	Approximately 0.30	0.36	0.40	Approximately 0.40
Median FiO ₂ in higher target group [†]	0.45	0.56	Approximately 0.35	0.39	0.51	Approximately 0.50
Difference between groups [†]	-0.15	-0.13	Approximately -0.05	-0.03	-0.09	-0.15
Mortality (timepoint of assessment)	28 days, in-hospital	90 days	90 days	In-hospital	In-hospital	28 days
In lower target group	34.8%	42.9%	34.7%	24.2%	32.2%	34.3%
In higher target group	33.2%	42.4%	32.5%	33.9%	31.3%	26.5%
Difference between groups	1.6 percentage points	0.5 percentage points	2.2 percentage points	-9.7 percentage points	0.9 percentage points	7.8 percentage points

En pratique, pour les patients en SDRA, SpO₂ > 95%

This article was published on October 26, 2022, at NEJM.org.

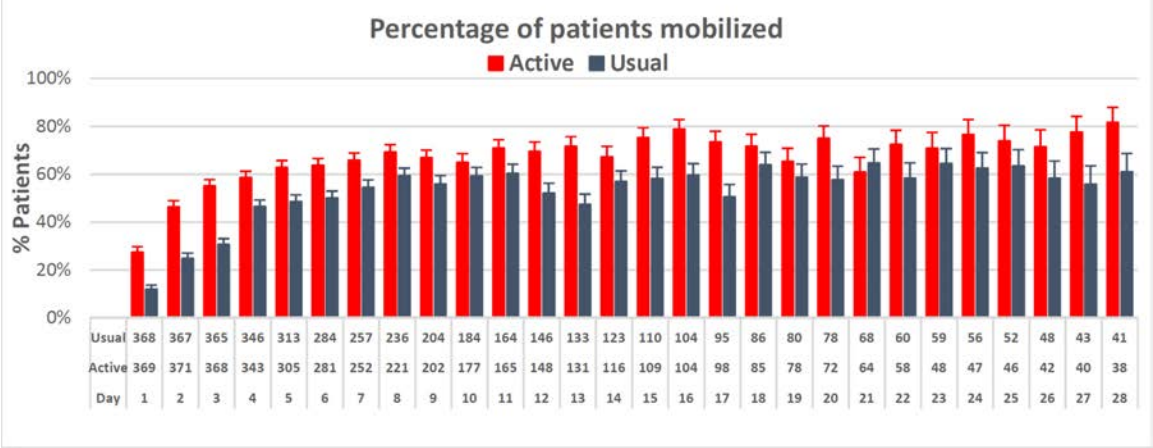
Early Active Mobilization during Mechanical Ventilation in the ICU

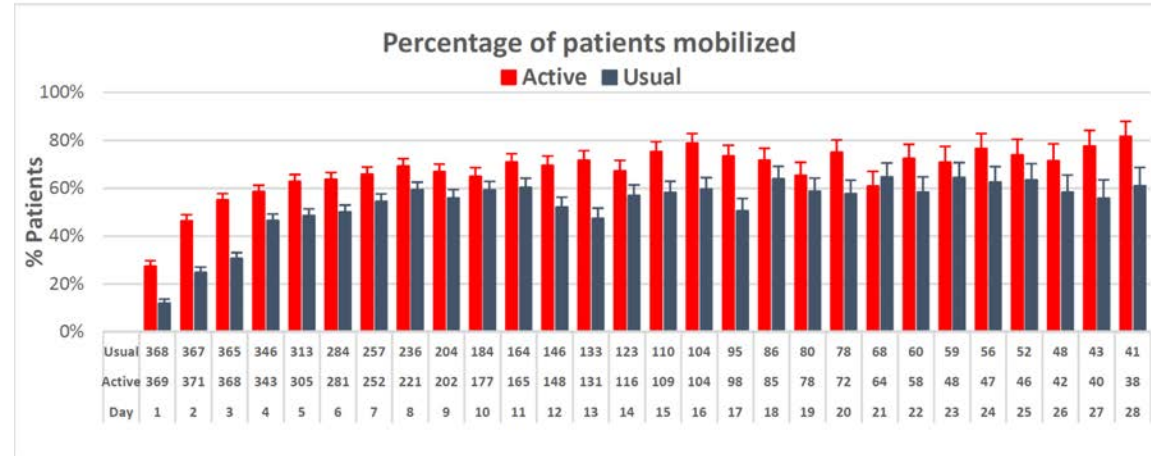
The TEAM Study Investigators and the ANZICS Clinical Trials Group*

- **Intervention**
 - Baisse de la sédation
 - Physiothérapie quotidienne en une ou plusieurs fois
 - Programme individualisé
- **Usual-care group**

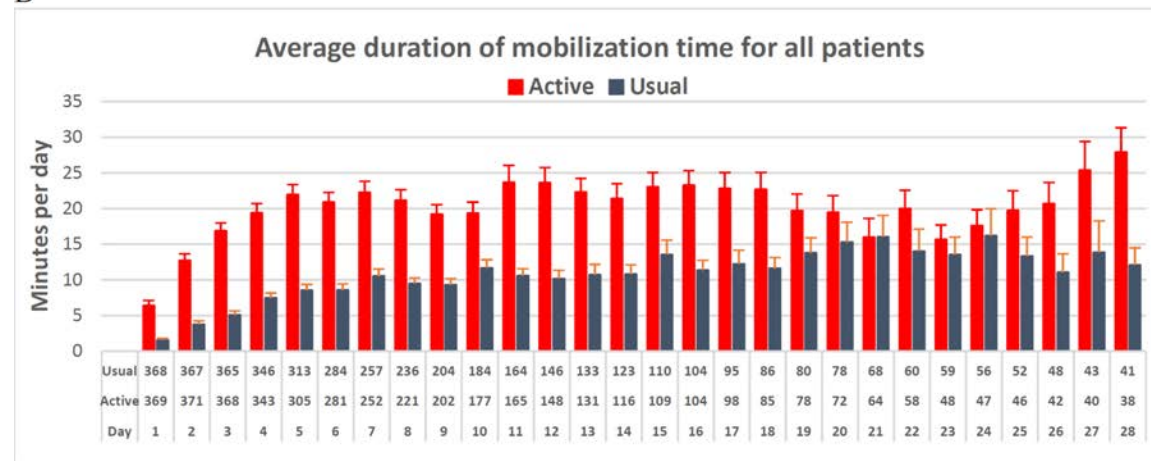
Table S5. Additional characteristics of the patients at baseline: physiology and ICU treatment.

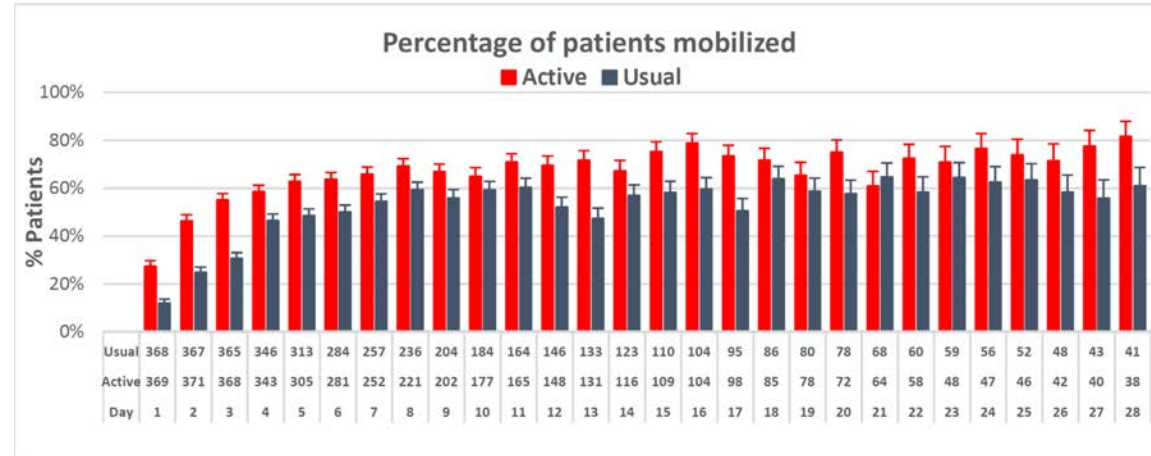
Characteristic	Early Mobilization (n=371)	Usual Care (n=370)
GCS, median [IQR] *	15 [14-15]	15 [14-15]
Serum creatinine, median [IQR]	106 [72-166]	97 [69-160]
PaO ₂ – mmHg †	83.6 ±31.2	84.1± 23.9
Agitation and delirium		
RASS score, median [IQR] ‡	-3 [-4 to -2]	-3 [-4 to -2]
CAM-ICU positive, no. (%)	16 (4.3)	15 (4.1)
ICU supports and therapies, no. (%)		
Sedatives via continuous infusion	363 (97.8)	360 (97.3)
Vasopressors via continuous infusion	228 (61.5)	231 (62.4)
Renal replacement therapy	82 (22.1)	79 (21.4)
Corticosteroids	169 (45.6)	167 (45.1)



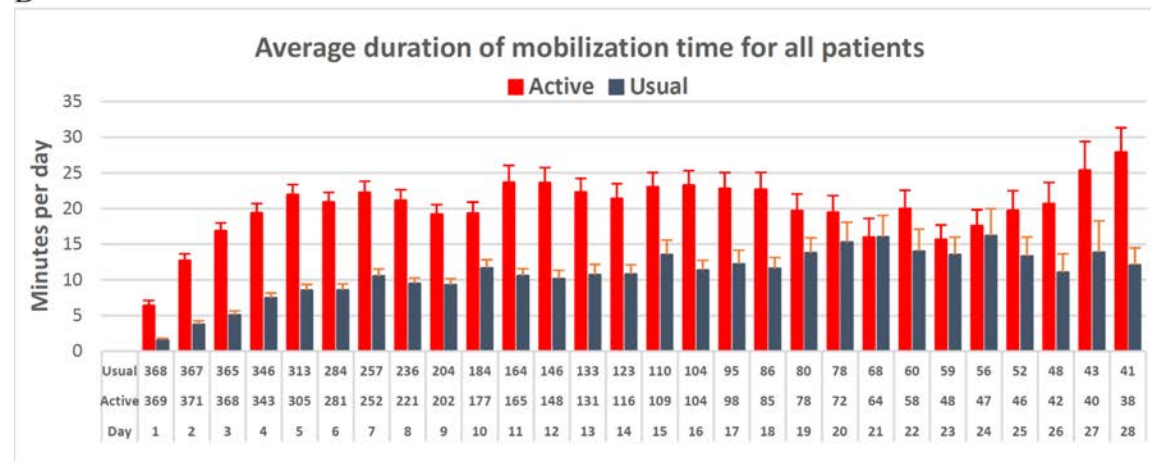


B

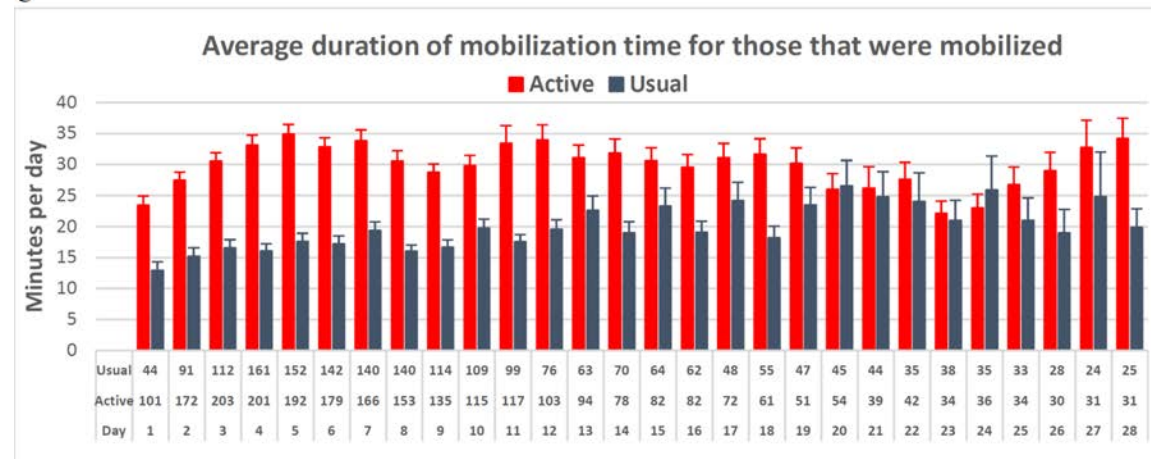




B



C



Outcome	Early Mobilization (N = 371)	Usual Care (N = 370)	Difference or Odds Ratio (95% CI) [†]
Primary outcome			
Days alive and out of hospital at day 180 [‡]			
Median no. (IQR)	143 (21 to 161)	145 (51 to 164)	-2.0 (-10 to 6)
Key secondary outcomes			
Death at day 180			
Patients — no. (%)	83/369 (22.5)	71/364 (19.5)	1.15 (0.81–1.65) [§]
Median no. of days since randomization (IQR)	17 (9 to 41)	19 (12 to 50)	-2.0 (-12.0 to 8.0)
Median no. of ventilator-free days at day 28 (IQR)	21 (8 to 25)	21 (11 to 25)	0.0 (-1.4 to 1.4)
Median no. of ICU-free days at day 28 (IQR)	16 (0 to 21)	17 (3 to 22)	-1.0 (-3.1 to 1.1)
Functional outcomes in survivors at day 180[¶]			
Score on EQ-5D-5L utility score	0.7±0.3	0.7±0.3	0.0 (-0.0 to 0.1)
Score on EQ Visual Analogue Scale ^{**}	70.2±19.7	69.0±20.1	2.0 (-5.7 to 9.7)
Median score on Barthel Index of ADL (IQR) ^{††}	100 (100 to 100)	100 (95 to 100)	0
Median score on IADL (IQR) ^{‡‡}	8.0 (7.0 to 8.0)	8.0 (6.0 to 8.0)	0.2 (-0.9 to 1.3)
Median score on WHODAS 2.0 (IQR) ^{§§}	12.5 (2.1 to 33.3)	14.6 (4.2 to 38.9)	-1.8 (-6.9 to 3.4)

Adverse events — no. (%) ¶¶

Patients with ≥1 adverse event potentially due to mobilization — no. (%)	34 (9.2)	15 (4.1)	2.55 (1.33–4.89)§	0.005
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Adverse events per patient — no. (%)				0.02
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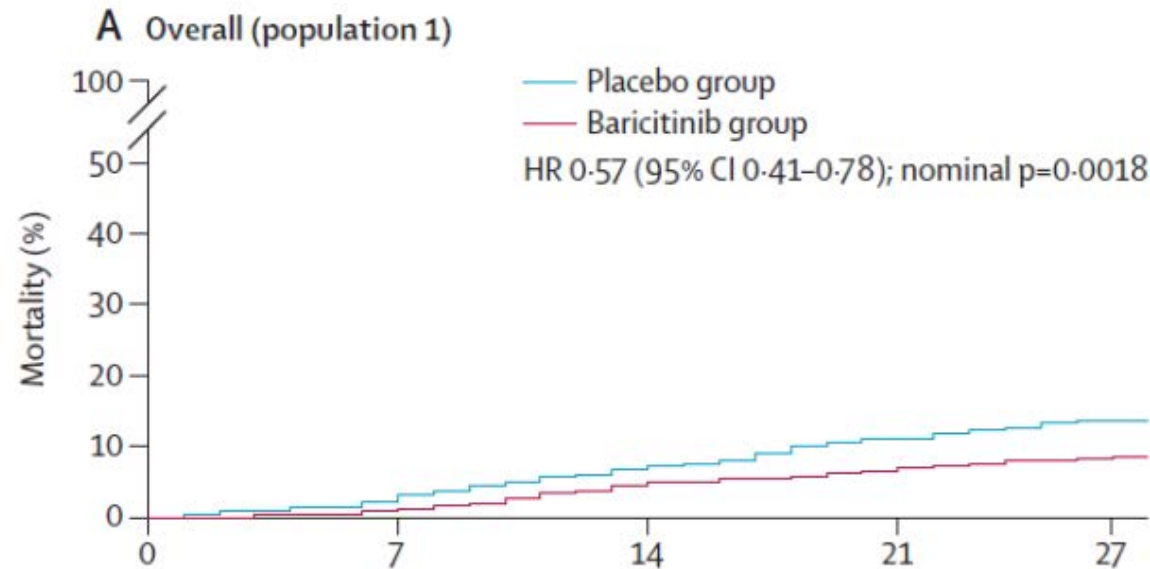
0	337 (90.8)	355 (95.9)	
1	19 (5.1)	11 (3.0)	
2	4 (1.1)	2 (0.5)	
≥3	11 (3.0)	2 (0.5)	

Type of adverse events — no. (%)			
----------------------------------	--	--	--

Altered blood pressure	13 (3.5)	8 (2.2)	0.27
Cardiac arrhythmia	13 (3.5)	4 (1.1)	0.03
Oxygen desaturation	8 (2.2)	1 (0.3)	0.02
Pain or agitation	4 (1.1)	1 (0.3)	0.37
Removal of invasive line	2 (0.5)	2 (0.5)	1.00
Gastrointestinal	2 (0.5)	1 (0.3)	1.00
Tachypnea	3 (0.8)	0	0.25
Altered neurologic state	1 (0.3)	1 (0.3)	1.00
Other	4 (1.1)	0	0.12

Efficacy and safety of baricitinib for the treatment of hospitalised adults with COVID-19 (COV-BARRIER): a randomised, double-blind, parallel-group, placebo-controlled phase 3 trial

Vincent C Marconi, Athimalaipet V Ramanan, Stephanie de Bono, Cynthia E Kartman, Venkatesh Krishnan, Ran Liao, Maria Lucia B Piruzeli, Jason D Goldman, Jorge Alatorre-Alexander, Rita de Cassia Pellegrini, Vicente Estrada, Mousumi Som, Anabela Cardoso, Sujatro Chakladar, Brenda Crowe, Paulo Reis, Xin Zhang, David H Adams, E Wesley Ely, on behalf of the COV-BARRIER Study Group*

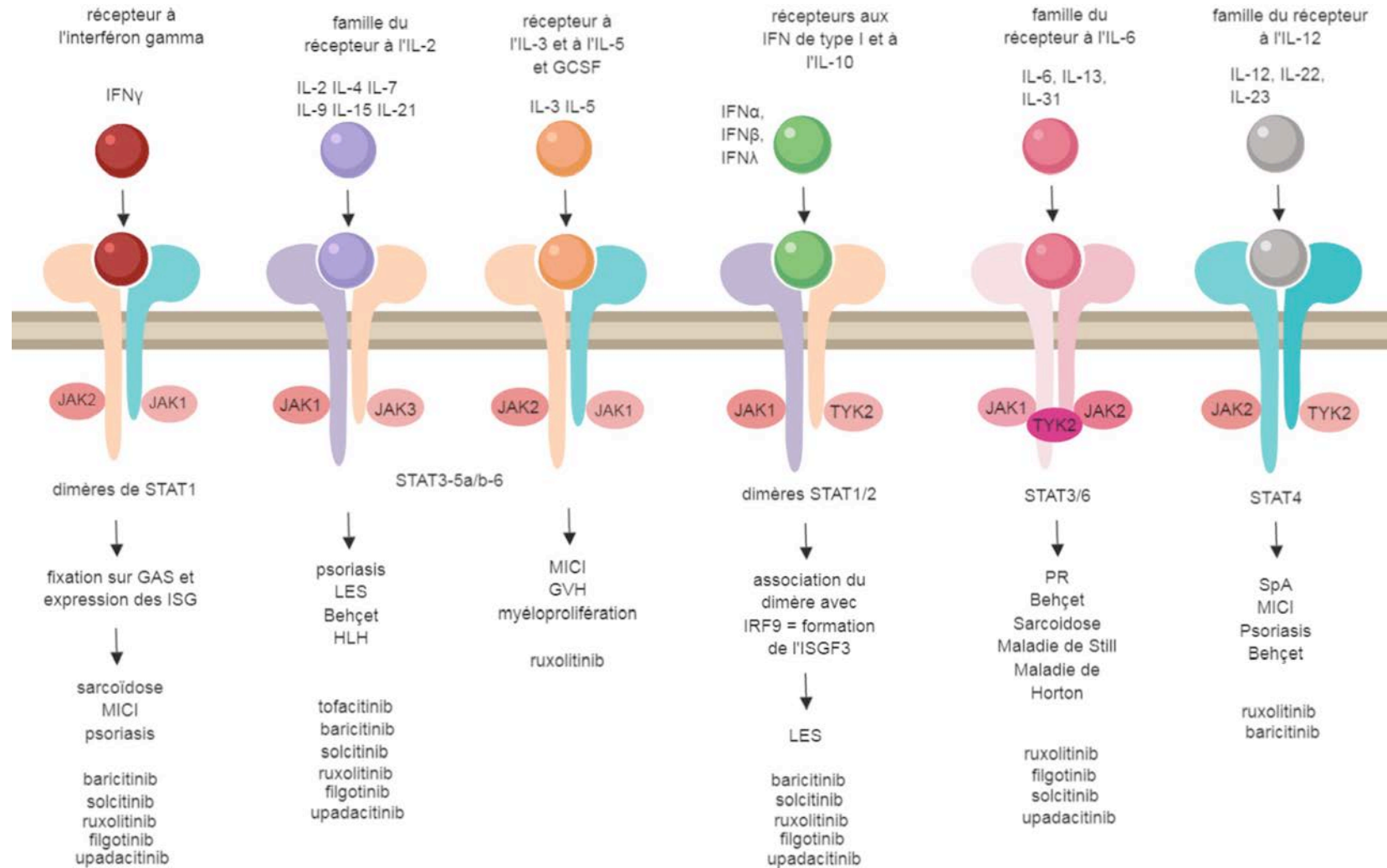


Number at risk
(number censored)

Placebo group	761 (0)	717 (20)	679 (28)	639 (40)	617 (44)
Baricitinib group	764 (0)	725 (30)	684 (44)	664 (50)	648 (55)

Inhibition de la voie de signalisation JAK/STAT

Janus Kinase / Signal Transducers and Activators of Transcription



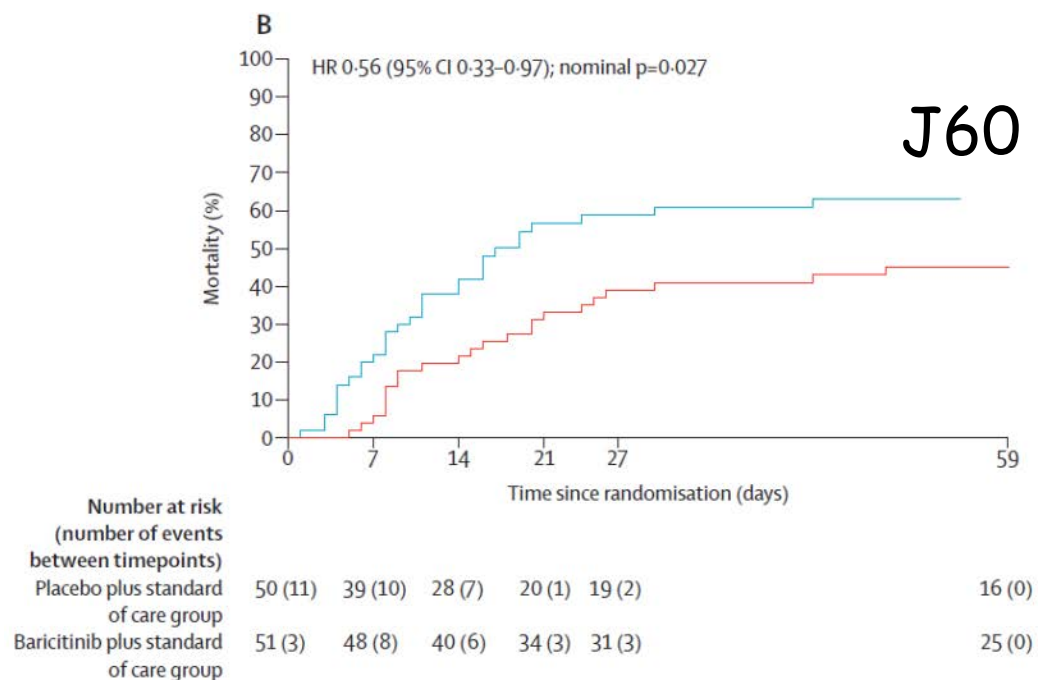
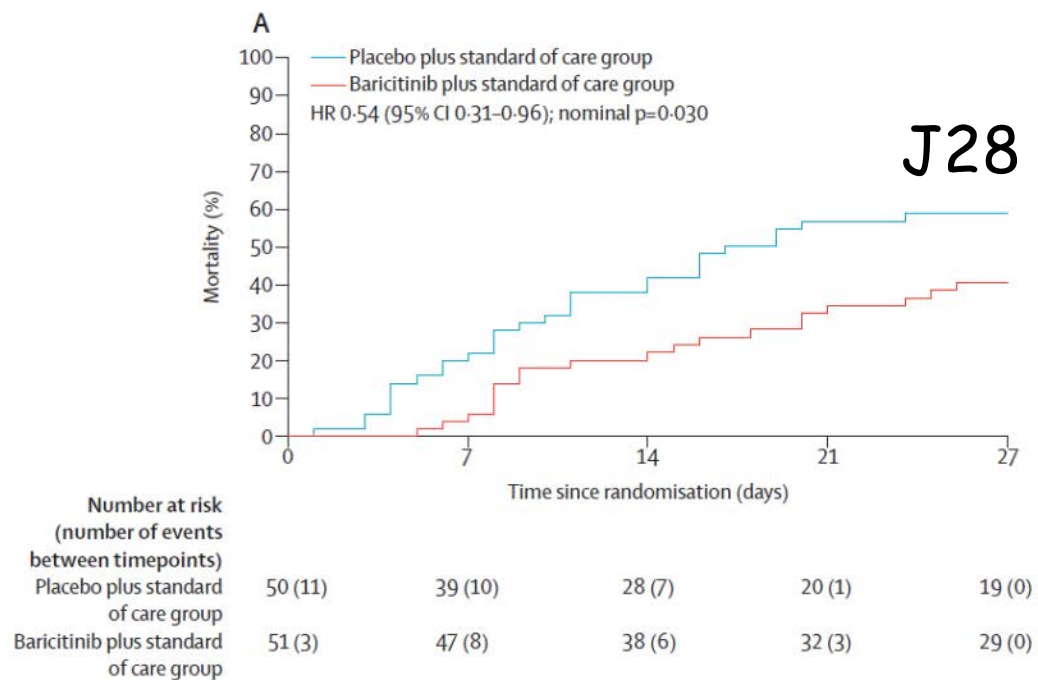
Efficacy and safety of baricitinib plus standard of care for the treatment of critically ill hospitalised adults with COVID-19 on invasive mechanical ventilation or extracorporeal membrane oxygenation: an exploratory, randomised, placebo-controlled trial



Lancet Respir Med 2022;
10: 327-36

*E Wesley Ely, Athimalaipet V Ramanan, Cynthia E Kartman, Stephanie de Bono, Ran Liao, Maria Lucia B Piruzeli, Jason D Goldman, José Francisco Kerr Saraiva, Sujatro Chakladar, Vincent C Marconi, on behalf of the COV-BARRIER Study Group**

- 18 centres (Argentine, Brésil, Mexique, USA)
- IMV ou ECMO + élévation d'au moins un marqueur infl (CRP, D-dimères, LDH, ferritine)
- Dexamethasone
- Baricitinib 4 mg ou placebo (SNG) / 14 jours (ou sortie H)



	Baricitinib plus standard of care group (n=50)	Placebo plus standard of care group (n=49)
Treatment-emergent adverse event*	44 (88%)	47 (96%)
Mild	3 (6%)	3 (6%)
Moderate	17 (34%)	11 (22%)
Severe	24 (48%)	33 (67%)
Death due to adverse event†	5 (10%)	3 (6%)
Serious adverse event	25 (50%)	35 (71%)
Discontinuation from study treatment due to adverse event (including death)	14 (28%)	17 (35%)
Treatment-emergent infection	35 (70%)	35 (71%)
Serious infections	22 (44%)	26 (53%)
Herpes simplex virus	1 (2%)	0
Opportunistic infections‡	0	2 (4%)

NURSE-TO-NURSE FAMILIARITY AND MORTALITY IN THE CRITICALLY-ILL



American Journal of

ATS American Thoracic Society
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RESPIRATORY AND CRITICAL CARE MEDICINE®

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Illustration of antibodies (blue) attaching to a virus-infected cell (purple). Image from Design Cells/Science Photo Library.

IN THIS ISSUE

AMERICAN THORACIC SOCIETY DOCUMENTS
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ORIGINAL ARTICLES
Recurrent Severe Preschool Wheezing: From Prespecified Diagnostic Labels to Underlying Endotypes (See page 522)
Racial Segregation and Respiratory Outcomes among Urban Black Residents with and at Risk of Chronic Obstructive Pulmonary Disease (See page 536)

Early Bacterial Identification among Intubated Patients with COVID-19 or Influenza Pneumonia: A European Multicenter Comparative Clinical Trial (See page 546)
Opioid Use Increases the Risk of Delirium in Critically Ill Adults: Independence of Pain (See page 566)

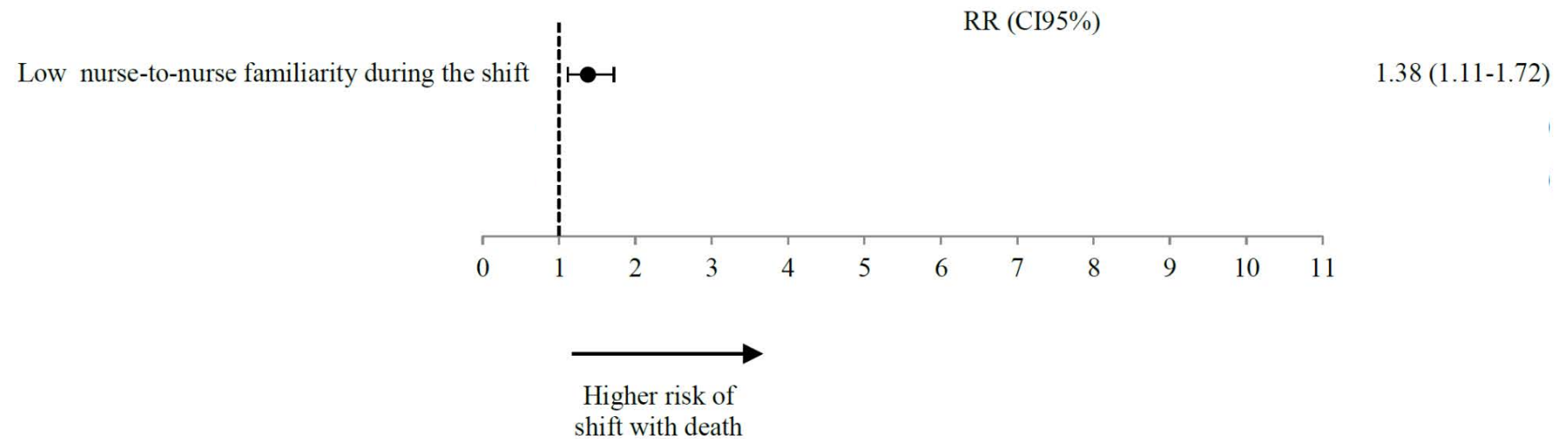
Effect of Continuous Positive Airway Pressure on Arrhythmia in Atrial Fibrillation and Sleep Apnea: A Randomized Controlled Trial (See page 572)

IMPACT FACTOR 21.4

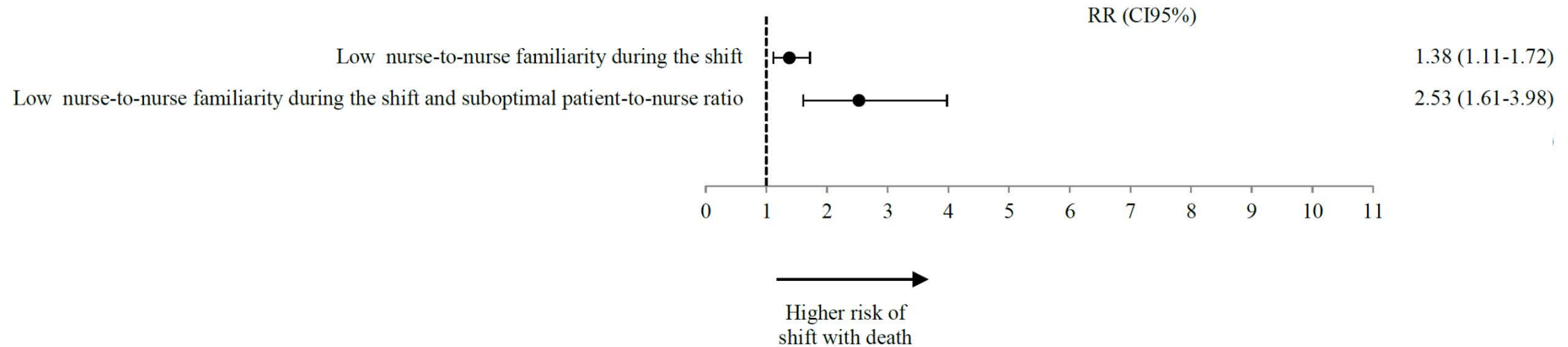
Caractéristiques des vacations sans et avec décès (sans LATA)

	Shifts Without Death N= 31,971 (%)	Shifts With Death N= 3,101 (%)
Staff		
Nurse-to nurse familiarity, mean (SD)		
<i>In the shift</i>	54 (2)	51 (2)
<i>One shift before</i>	54 (2)	51 (2)
<i>Two shifts before</i>	54 (2)	51 (2)
Patient-to-staffing ratios		
<i>Optimal patient-to-nurse and assistant-nurse ratio</i>	20,280 (63%)	1,961 (63%)
<i>Suboptimal patient-to-assistant-nurse ratio</i>	3,903 (12%)	340 (11%)
<i>Suboptimal patient-to-nurse ratio</i>	5,173 (16%)	501 (16%)
<i>Suboptimal patient-to-nurse and assistant-nurse ratio</i>	2,615 (8%)	299 (10%)
Experience length, mean (SD)	431 (129)	423 (127)
Workload, mean (SD)		
Turnover	13 (13)	22 (13)
Life-sustaining procedure	1 (0)	1 (0)
Proportion of Isolation	20 (14)	20 (13)

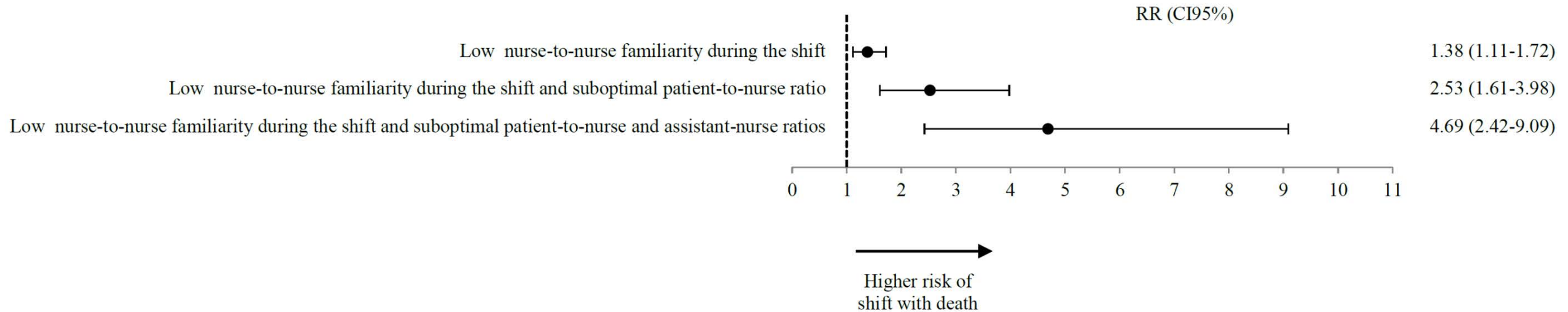
Risque de décès avec au moins un décès (hors LATA) pendant une vacation



Risque de décès avec au moins un décès (hors LATA) pendant une vacation



Risque de décès avec au moins un décès (hors LATA) pendant une vacation





AER

ACTUALITÉS EN RÉANIMATION



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