

UNIVERSITY HOSPITAL BRNO  
FACULTY OF MEDICINE  
MASARYK UNIVERSITY



DEPARTMENT OF **PAEDIATRIC**  
ANAESTHESIOLOGY  
AND INTENSIVE CARE MEDICINE

# Nejzajímavější publikace oboru pohledem Monitoringu článků **AKUTNĚ.CZ**

Jozef Klučka

 **FAKULTNÍ  
NEMOCNICE  
BRNO**

**M U N I  
M E D**

# Obsah

- Medicína založená na důkazech - EBM
- Monitoring článků AKUTNĚ.CZ
- TOP anestezie
- TOP ICU
- TOP COVID-19



# EBM medicine?

Zbraň proti koronaviru? Při nákaze pomáhá vitamin K, tvrdí vědci

11.6.2020

Podle nizozem množství“ jíst

## Vladimir S proti koron

ČTK, 03.03.2020 13:52

Při léčbě nemoci zp

Pacientovi  
servírovat vnitřní  
doprovodu hud

PROTI KORONAVIRU ZŘEJMĚ POMÁHÁ SELEN

## hudba pomůže

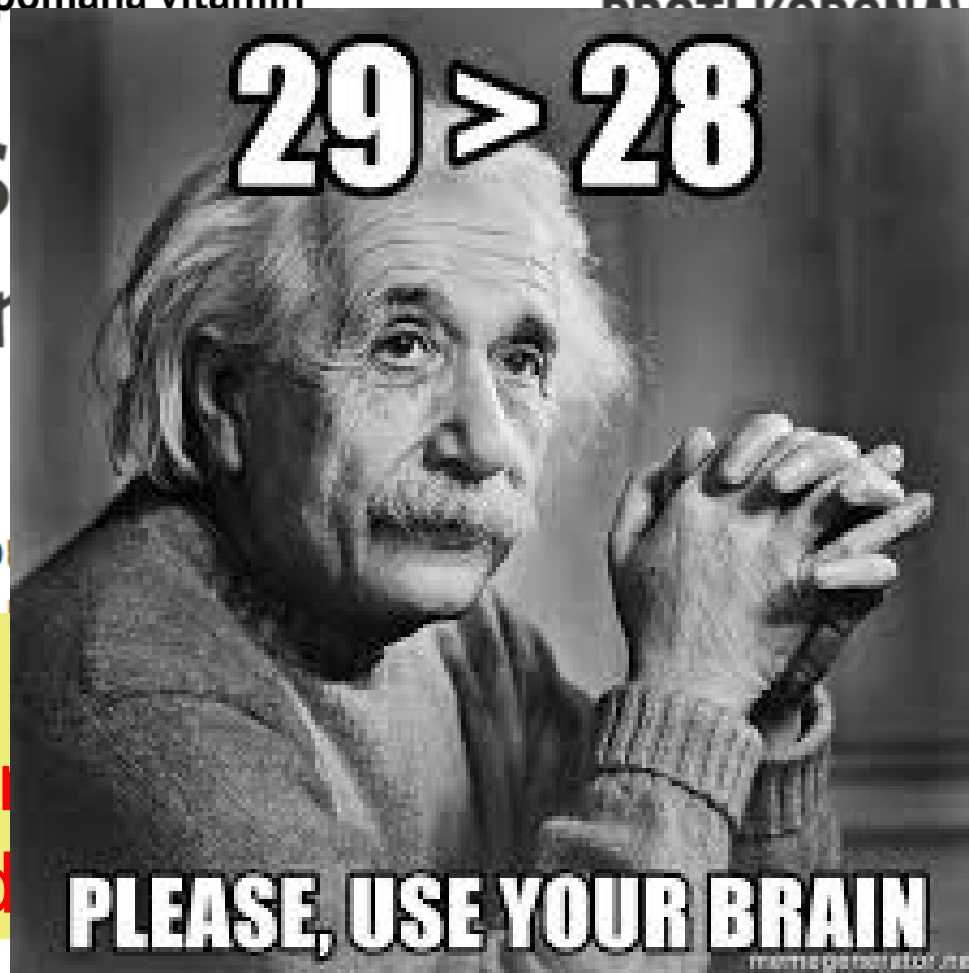
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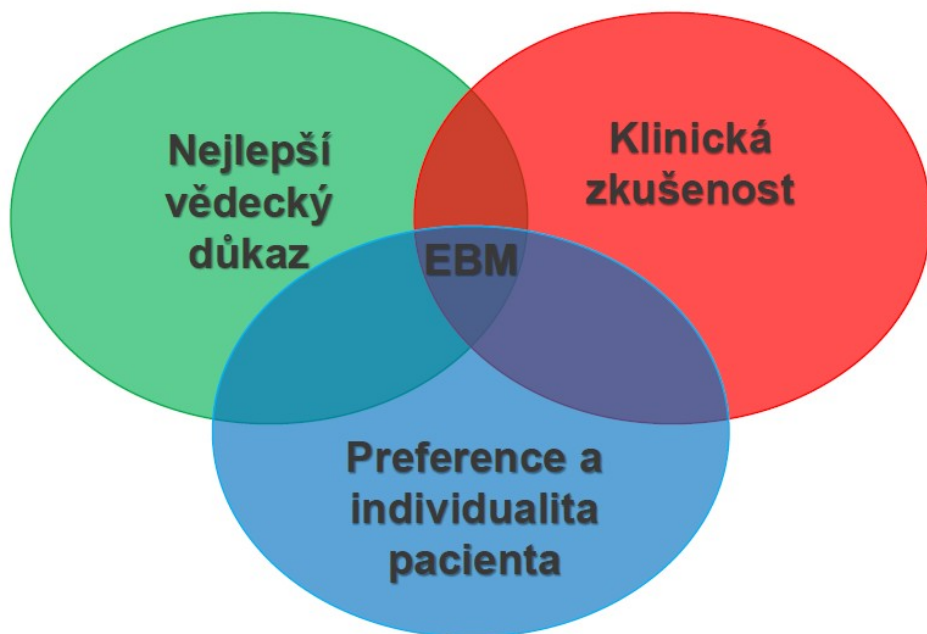
bilniny.

n C, D, K,  
at ho kouřit za  
(R. Wagnera)?



# Evidence based medicine

- Medicína založená na důkazech = „Vědomé, zřetelné a soudné používání nejlepších současných důkazů při rozhodování o péči o jednotlivé pacienty“



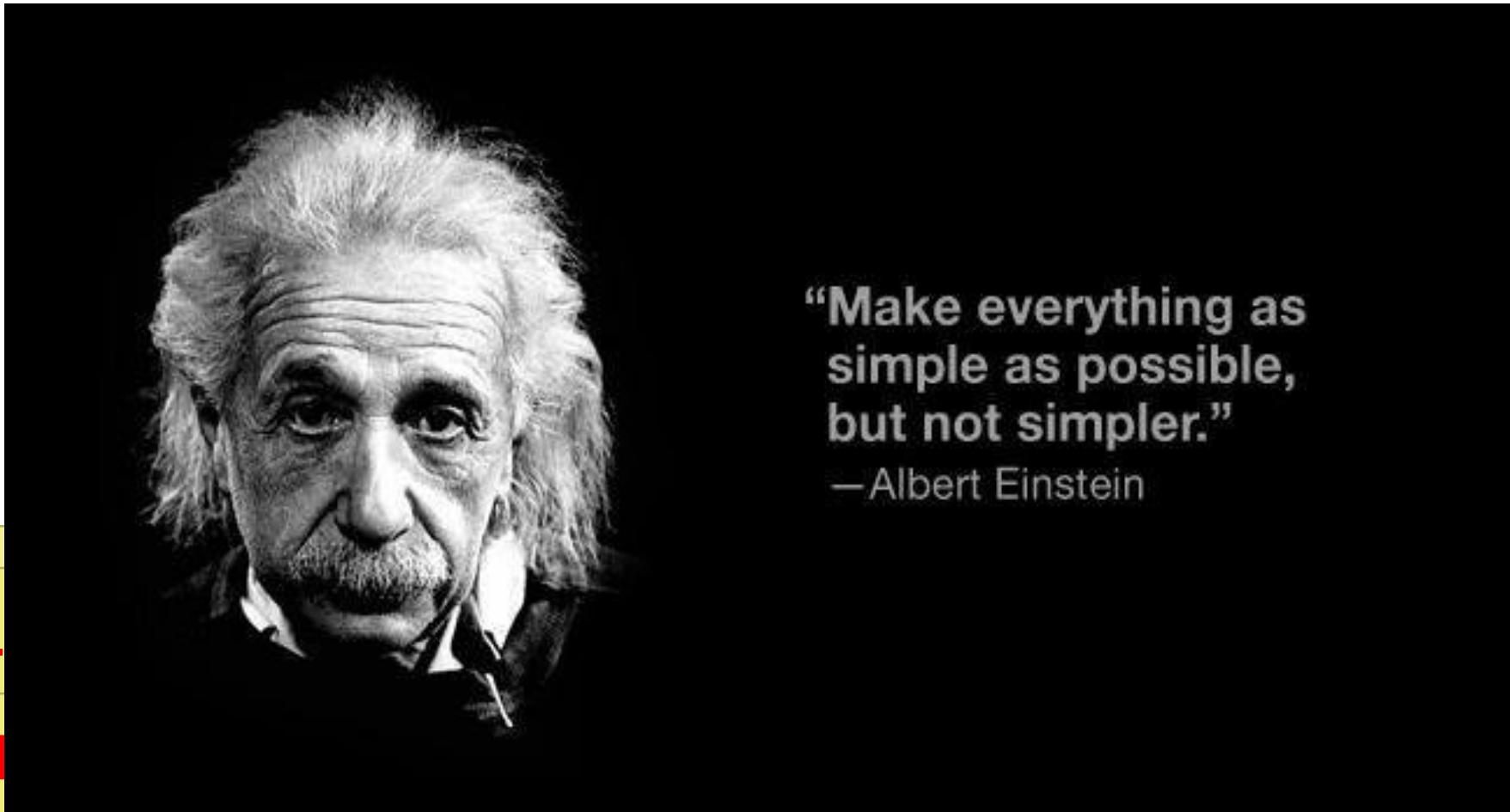
16-18 September 2018  
Edinburgh, UK  
[colloquium.cochrane.org](http://colloquium.cochrane.org)



*“Evidence-based care is not about the evidence, but about responding to patient problems with evidence”*

Victor Montori  
#CochraneForAll

# Medicína založená na důkazech v praxi



3.

2. Vyl

1. Identifikuj klinický problém





# Monitoring článků AKUTNĚ.CZ

Kalendář AKUTNĚ.CZ

Zadejte frázi pro vyhledání



AKTUALITY

ALGORITMY

SBORNÍKY

VÝUKA

PUBLIKACE

REPORTÁŽE

KONTAKTY

ENGLISH



## Odborný program a registrace XII. konference AKUTNĚ.CZ - AKTUALIZOVÁNO!

Dovolujeme si pozvat všechny příznivce akutní medicíny na XII. konferenci AKUTNĚ.CZ, která se bude konat v sobotu 21. listopadu 2020 **virtuálně** z prostor Univerzitního kampusu Bohunice. S ohledem na aktuální epidemiologickou situaci naleznete vždy aktuální organizační informace na našem webu. Součástí programu jsou i letos **posterové sekce lékařské i NLZP části**, které budou obě taktéž virtuální s prezentací posterů jejich autory.

**Registrace** na letošní konferenci byla spuštěna 10. 10. 2020. Program workshopů zveřejníme v listopadu 2020, registrace na ně bude vzhledem k aktuální situaci posunuta co nejbližší konání samotné konference, a to na 13. listopadu 2020.

Článek měsíce  
**ECMO pro závažné ARDS: systematický přehled a meta-analýza individuálních dat pacientů**

### Monitoring článků

Články COVID-19

října

2020

září

2020

srpna

2020

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června

května

# TOP Anesteziologie



Anestezie v roce 1846



Anestezie v roce 2020





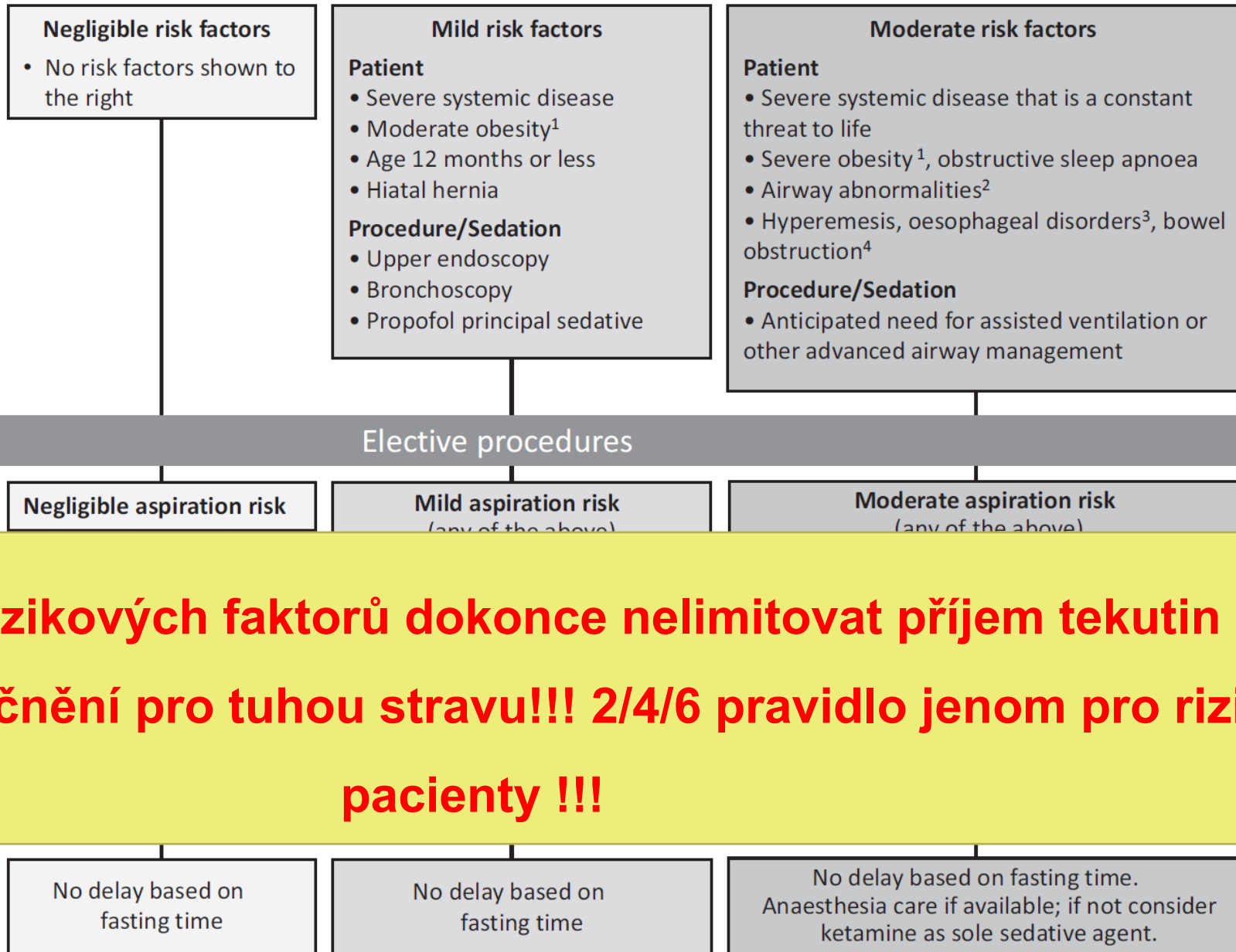
## Pre-sedation assessment – risk factors

### Guidelines

## An international fasting be

S. M. Green,<sup>1</sup> P.  
E. Barbi,<sup>7</sup> L. R. C.  
V. M. Yuen,<sup>13</sup> E.  
Committee for

- Prolo



**U pacientů bez rizikových faktorů dokonce nelimitovat příjem tekutin při 2 hodinové době lačnění pro tuhou stravu!!! 2/4/6 pravidlo jenom pro rizikové pacienty !!!**





## CARDIOVASCULAR

## Personalised haemodynamic management targeting baseline cardiac index in high-risk patients undergoing major abdominal surgery: a randomised single-centre clinical trial

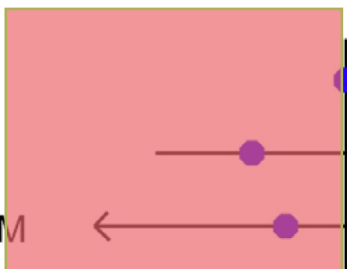
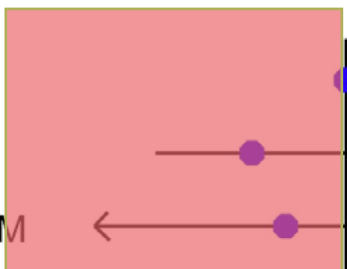
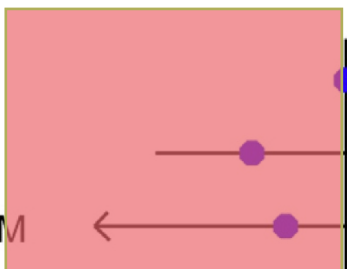
Julia Y. Nicklas<sup>1,\*</sup>, Oliver Diener<sup>1</sup>, Maximilian Leistenschneider<sup>1</sup>, Christina Sellhorn<sup>1</sup>, Gerhard Schön<sup>2</sup>, Martin Winkler<sup>1</sup>, Guenter Daum<sup>3</sup>, Edzard Schwedhelm<sup>4</sup>, Julian Schröder<sup>5</sup>, Margit Fisch<sup>6</sup>, Barbara Schmalfeldt<sup>7</sup>, Jakob R. Izbicki<sup>8</sup>, Michael Bauer<sup>9</sup>, Sina M. Coldewey<sup>9,10</sup>, Daniel A. Reuter<sup>11</sup> and Bernd Saugel<sup>1,12</sup>

- **Prospektivní randomizovaná studie**

### Table 3 Primary outcome

**Individualizace cíle optimalizace (např. zhodnocením předoperačního srdečního indexu) může u rizikových pacientů vést k signifikantní redukci (RR: 0.54, 95% IS: 0.38-0.77; p <0.001) rizika pooperačních komplikací a mortality**

## Intraoperative ventilation strategies to prevent postoperative pulmonary complications: a network meta-analysis of randomised controlled trials

| Ventilation strategies    | NMA<br>OR (95% CrI)   | NMA<br>OR (95% CrI) | Direct comparison<br>OR (95% CI) | NNT  | $P_{\text{best}}$<br>(%) | Rank<br>(95%CrI) | SUCRA |
|---------------------------|---|---------------------|----------------------------------|------|--------------------------|------------------|-------|
| <b>PPCs</b>               |   |                     |                                  |      |                          |                  |       |
| CMV                       |  | Reference           | -                                | -    | 0.0                      | 6 (4, 6)         | 0.071 |
| LV <sub>T</sub> +LPEEP    |  | 0.44 (0.20, 1.10)   | 0.95 (0.16, 5.49)                | 11.9 | 6.7                      | 3 (1, 5)         | 0.562 |
| LV <sub>T</sub> +LPEEP+RM |  | 0.58 (0.08, 4.39)   | -                                | 7.6  | 23.2                     | 4 (1, 6)         | 0.425 |

**Perioperační protektivní umělá plicní ventilace (PEEP a malý dechový objem) byla asociovaná s redukcí pooperačních plicních komplikací, výskytu pneumonie a atelektáz.**



# TOP Intenzivní medicína



ICU v roce 1953



ICU v roce 2020



# Hydrocortisone for the Treatment of Septic Shock: A Retrospective Before-After Study

Paul E. Marik, MD, FCCP; Vikramjit Singh, MD, FCCP; and John Catravas, PhD, FCCP

**TABLE 2 ]** Outcomes

| Variable                                    |
|---|
| Hospital mortality                          |
| ICU LOS, median (range)                     |
| Duration of vasopressor use, median (range) |
| RRT for AKI, No. (%)                        |
| $\Delta$ SOFA, 72 h                         |
| Procalcitonin clearance, median (range)     |

AKI = acute kidney injury; LOS = length of stay; RRT = renal replacement therapy; SOFA = Sequential Organ Failure Assessment.  
 See Table 1 legend for definitions.  
<sup>a</sup> $P < .001$ .  
<sup>b</sup> $P = .02$ .

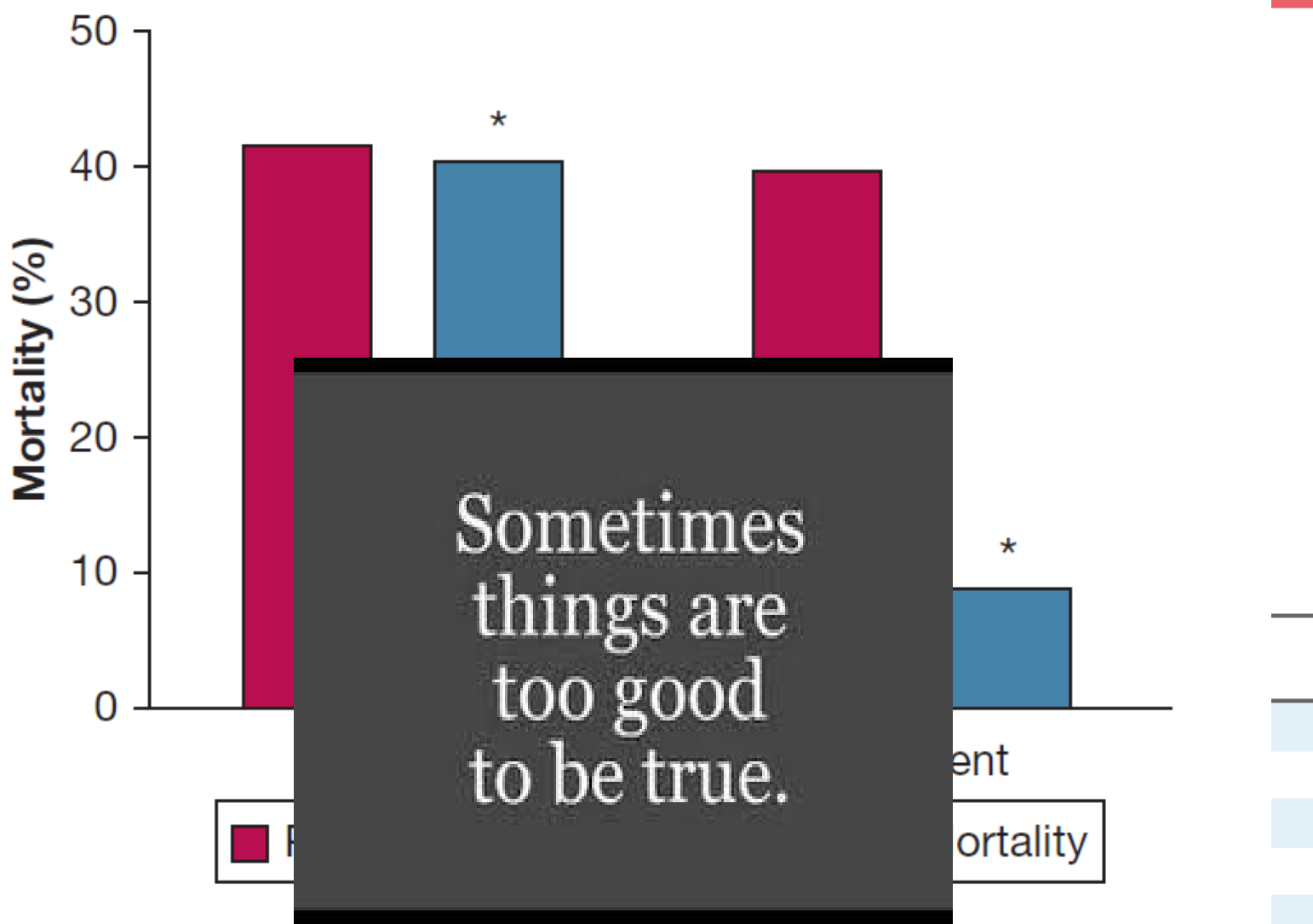


Figure 1 – Predicted and actual mortality in the treatment and control groups. Predicted mortality was derived from APACHE IV scoring system results. \* $P < .001$  for comparison of treatment group vs control group (see text). APACHE = Acute Physiology and Chronic Health Evaluation.





ORIGINAL

# Combination therapy of vitamin C and thiamine for septic shock: a multi-centre, double-blinded randomized, controlled study



**Table 3 Primary and secondary outcomes**

| Variables                 | Treatment ( <i>n</i> = 53) | Placebo ( <i>n</i> = 58) | Difference (95% CI)  | <i>p</i> value |
|---------------------------|----------------------------|--------------------------|----------------------|----------------|
| <b>Primary outcome</b>    |                            |                          |                      |                |
| Delta SOFA score          | 3 (− 1 to 5)               | 3 (0–4)                  | 0 (− 2 to 1)         | 0.96           |
| <b>Secondary outcomes</b> |                            |                          |                      |                |
| 7-day mortality           | 5 (9.4)                    | 6 (10.3)                 | − 0.9 (− 12 to 10.2) | 0.87           |
| Vasopressor-free days     | 11 (5–12)                  | 11 (10–12)               | 0 (− 1 to 0)         | 0.16           |

**Terapie vitaminem C a thiaminem nevedla k ovlivnění orgánové dysfunkce (SOFA) a/nebo mortality pacientů v septickém šoku. Co ten chybějící hydrokortison?**

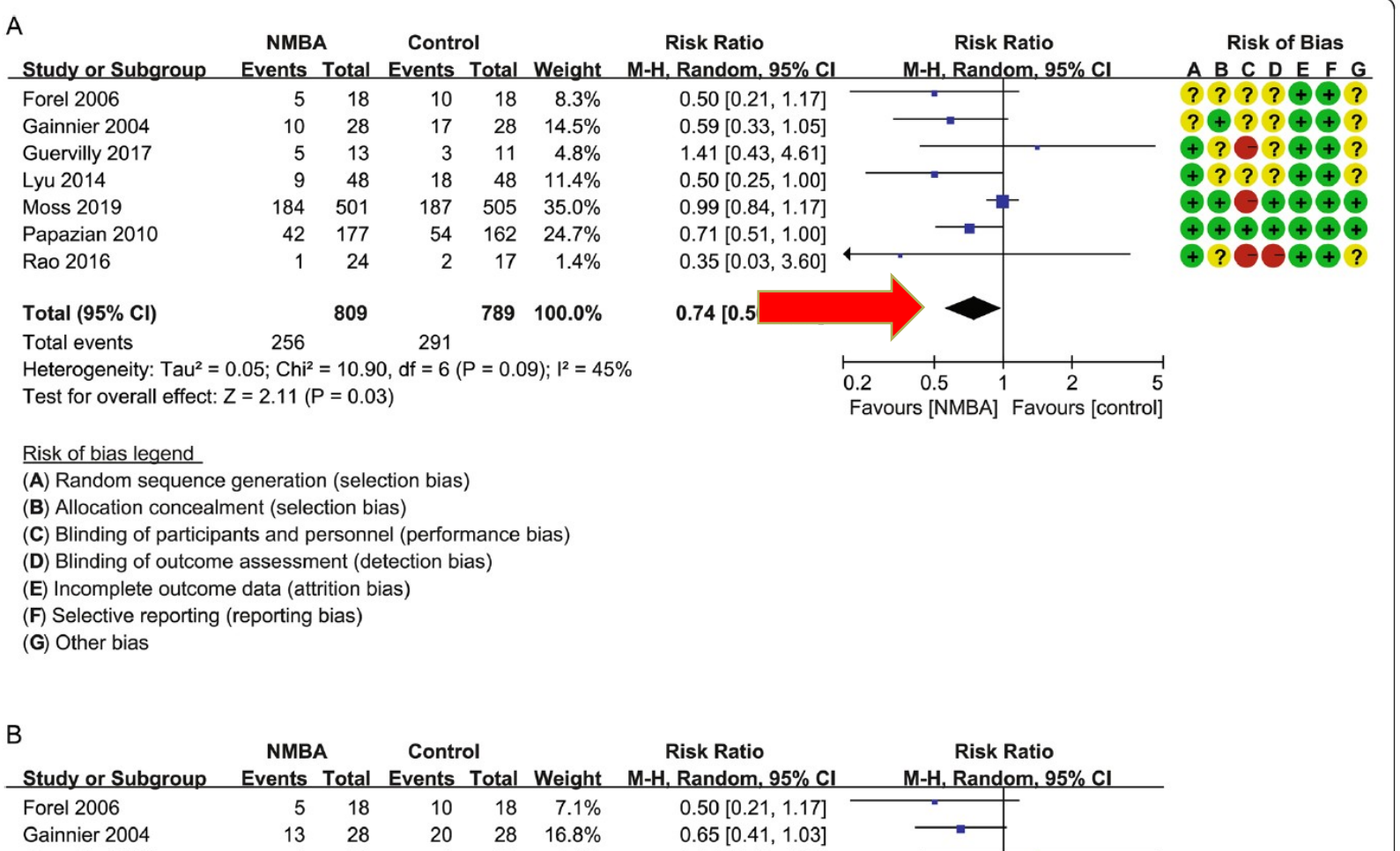


**RESEARCH**

Validation  
 use in acu  
 a meta-an

Wei Chang, Qin Sun, Fe

- Meta
- 7 stu



**NMBA u ARDS vedli k redukci 28-denní (RR 0.74, p = 0.03) a 90-denní mortality (RR 0.77, p = 0.04) při současné redukci barotraumatu (RR 0.56, p = 0.009)**

Test for overall effect: Z = 2.05 (P = 0.04)  
 Favours [NMBA] Favours [control]  
**Fig. 2** The effect of NMBAs on mortality truncated to day 28 (a) and day 90 (b) in moderate-to-severe ARDS patients. **a** The effect of NMBA on mortality truncated to day 28 in moderate-to-severe ARDS patients. **b** The effect of NMBA on mortality truncated to day 90 in moderate-to-severe



**RAPID**

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B. Conno  
T. Piraino

© 2020 Spring

# NOW YOU CAN RELAX



t NMBA  
sedation



t NMBA

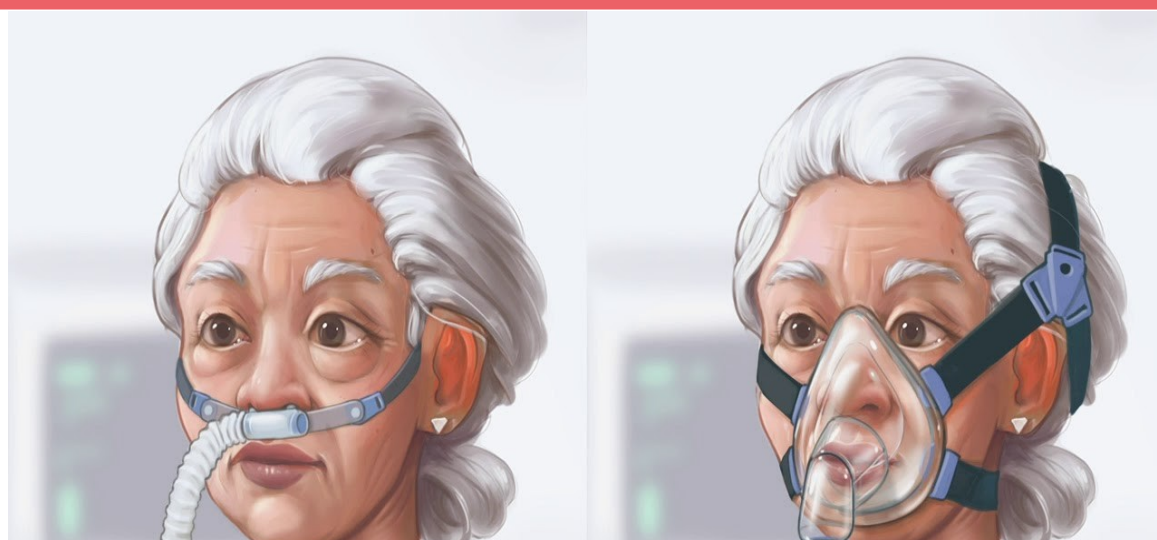
**Fig. 1**  
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RESEARCH

Open Access



# High-flow nasal cannula oxygen therapy versus non-invasive ventilation for chronic obstructive pulmonary disease patients after extubation: a multicenter, randomized

**Table 2** Primary outcome and cause analysis

|                               | HFNC ( <i>n</i> = 44) | NIV ( <i>n</i> = 42) | Risk difference, % (95% CI) | <i>p</i> value |
|-------------------------------|-----------------------|----------------------|-----------------------------|----------------|
| Primary outcome, <i>n</i> (%) |                       |                      |                             |                |
| Treatment failure             | 10 (22.7)             | 12 (28.6)            | − 5.8 (− 23.8 to 12.4)      | 0.535          |
| Invasive ventilation          | 6 (13.6)              | 6 (14.29)            | − 0.65 (− 16.01 to 14.46)   | 0.931          |
| Treatment switch              | 4 (9.1)               | 6 (14.3)             | − 5.2 (− 19.82 to 9.05)     | 0.516          |

**Selhání metody bylo vyšší u NIV vs. HFNC (28,6% vs. 22,7%) při lepší toleranci a nižším výskytu tachypnoe (po 48 hodinách)**



# TOP COVID-19



**Španělská chřipka v roce 1953**



**COVID-19 v roce 2020**



# SARS-CoV-2

- Co můžeme ovlivnit ???
- **Nenakazit se !!! (ochranné pomůcky, postupy)**
- Terapie
  - Remdesivir
  - Kortikoidy
  - Hydroxychlorochin?
  - Rekonvalescentní plasma?



Anaesthe

Guidel

Cons

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Guide

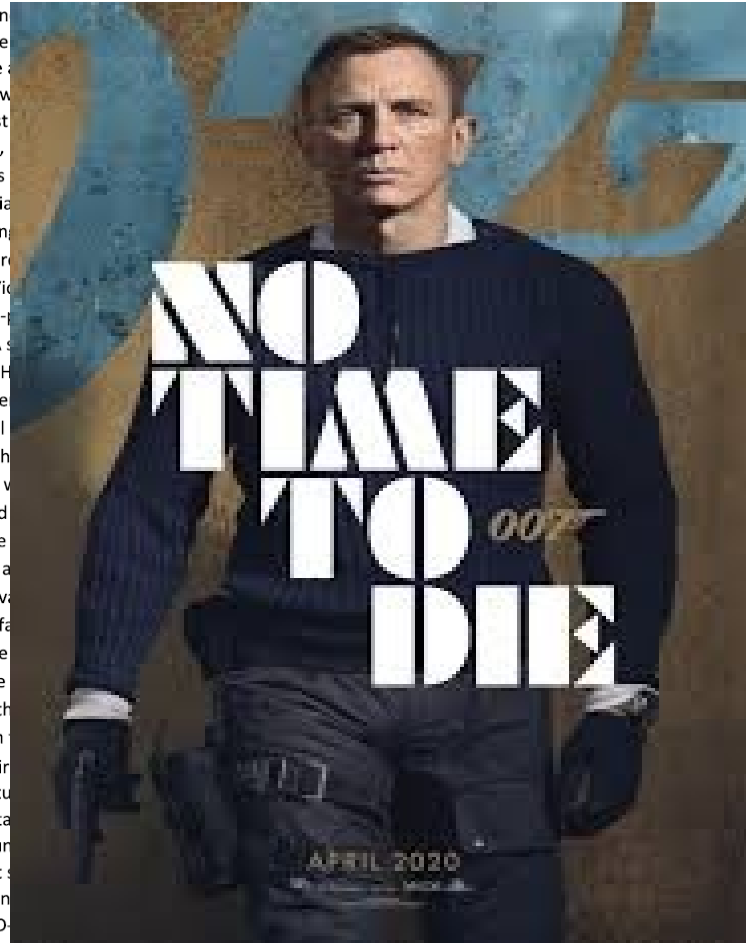
Intensi

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Aerosol-generující p  
maskou, extubace, od

- Tracheal intubation of the patient with COVID-19 is a high-risk procedure for staff, irrespective of the clinical severity of disease.
- In severe COVID-19 it is also a high-risk procedure for the patient.
- Limit staff present at tracheal intubation: one intubator; one assistant; and one to administer drugs and monitor the patient. A runner should be outside the room.
- Create a COVID-19 tracheal intubation trolley or pack that can be used in ICU or elsewhere.
- Wear full personal protective equipment (PPE) at all times. Consider double gloving. Defog goggles and/or eye wear if possible. Touch as little as possible in the room to avoid fomites.
- Intubate in a negative pressure room with > 12 air changes per hour whenever possible.



- Know an
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- Prepare a
- Plan how
- The best
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- patients
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- If COVID
- Discard disposable equipment safely after use. Decontaminate reusable equipment fully and according to manufacturer's instructions.
- After leaving the room ensure doffing of PPE is meticulous.
- Clean the room 20 minutes after tracheal intubation (or last aerosol-generating procedure).
- A visual record of ease of tracheal intubation should be prominently visible in the patient's room.
- If airway difficulty occurs the subsequent plan should be displayed in the room and communicated between shifts.

1111/anae.15054

patients

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js<sup>6</sup>

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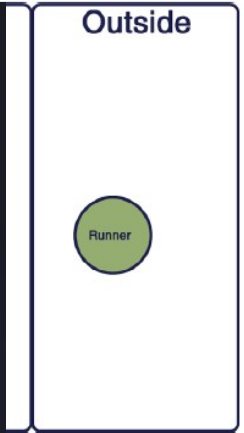




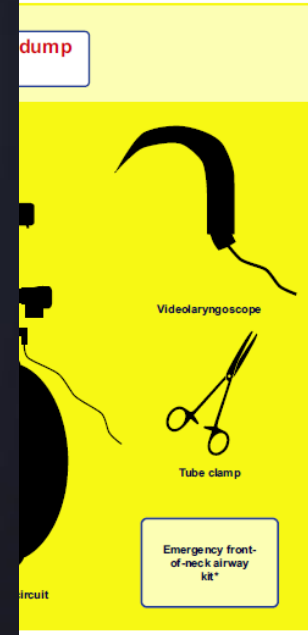
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**KEEP IT SIMPLE AND STAY NEGATIVE!!!**



intubation of a patient  
ed from [20].





# Remdesivir

The NEW ENGLAND JOURNAL of MEDICINE

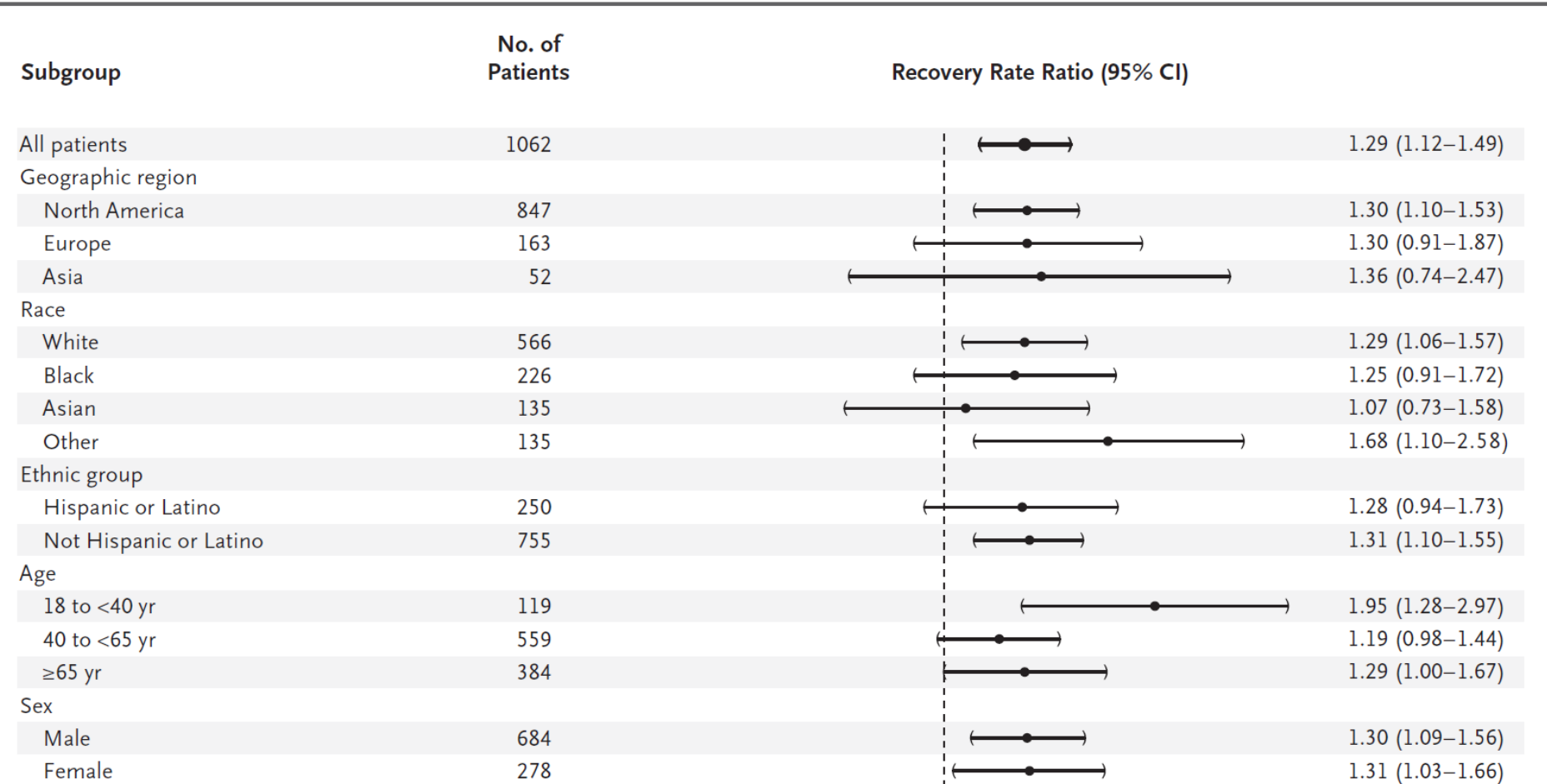
- Prodrug analoga nukleotidů = inhibice RNA polymerázy

ORIGINAL ARTICLE

Compassionate Use of Remdesivir

- **60% pacientů nežádoucí účinky** - ↑JT, vyrážka, hypotenze, ↓renálních funkcí, **23% závažné NÚ** – MODS, septický šok, hypotenze, AKI  
ALE
- **68% pacientů na oxygenoterapii zlepšeno po remdesiviru, mortalita 13% < předchozí data 17-78% (těžký průběh – oxygenoterapie)**
- 61 pacientů → 53 analýza (22 USA, 22 Evropa, 9 Japonsko)





- Rai
- Rei
- 105

- **Kratší průběh (10 vs. 15 dnů)**
- **nižší mortalita (6,7 vs. 11,9% - 15 denní 11,4 vs. 15,2% - 28-denní)**
  - **méně nežádoucích účinků vs. placebo (24,6 vs. 31,6)**
- **Efekt dominantně u pacientů bez UPV!!!**

Placebo Better

Remdesivir Better

## Dexamethasone in Hospitalized Patients with Covid-19 — Preliminary Report

The RECOVERY Collaborative Group\*

- Pacienti s potvrzenou infekcí COVID-19
- Randomizace 1:1 i.v./p.o **dexamethason 6mg/D vs. kontrolní skupina**
- Primární outcome 28-denní mortalita

# RECOVERY trial – kortikoidy u COVID-19 ?!



### Respiratory Support at Randomization

Dexamethasone

Usual Care

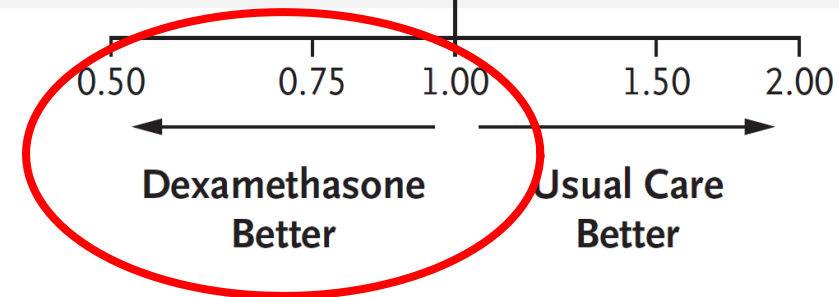
Rate Ratio (95% CI)

*no. of events/total no. (%)*

|                                 |                        |                         |  |                         |
|---------------------------------|------------------------|-------------------------|--|-------------------------|
| Invasive mechanical ventilation | 95/324 (29.3)          | 283/683 (41.4)          |  | 0.64 (0.51–0.81)        |
| Oxygen only                     | 298/1279 (23.3)        | 682/2604 (26.2)         |  | 0.82 (0.72–0.94)        |
| No oxygen received              | 89/501 (17.8)          | 145/1034 (14.0)         |  | 1.19 (0.91–1.55)        |
| <b>All Patients</b>             | <b>482/2104 (22.9)</b> | <b>1110/4321 (25.7)</b> |  | <b>0.83 (0.75–0.93)</b> |

**P<0.001**

Chi-square trend across three categories: 11.5



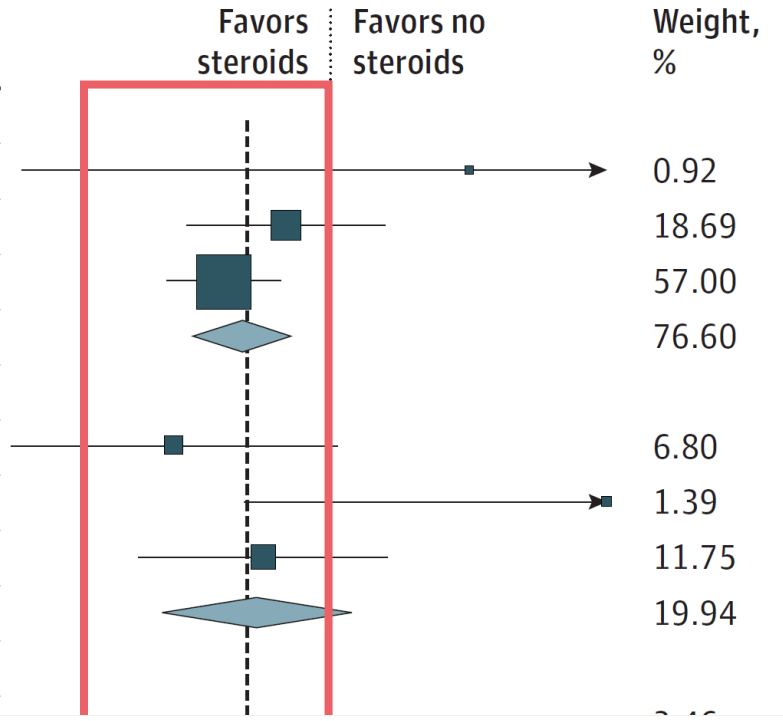
### Figure 3. Effect of Dexamethasone on 28-Day Mortality, According to Respiratory Support at Randomization.

Shown are subgroup-specific rate ratios for all the patients and for those who were receiving no oxygen, receiving oxygen only, or undergoing invasive mechanical ventilation at the time of randomization. Rate ratios are plotted as squares, with the size of each square proportional to the amount of statistical information that was available; the horizontal lines represent 95% confidence intervals.



# Association Between Administration of Systemic Corticosteroids

| Drug and trial            | ClinicalTrials.gov identifier | Initial dose and administration     | No. of deaths/total No. of patients |             | Odds ratio (95% CI) | Weight, % |
|---------------------------|-------------------------------|-------------------------------------|-------------------------------------|-------------|---------------------|-----------|
|                           |                               |                                     | Steroids                            | No steroids |                     |           |
| <b>Dexamethasone</b>      |                               |                                     |                                     |             |                     |           |
| DEXA-COVID 19             | NCT04325061                   | High: 20 mg/d intravenously         | 2/7                                 | 2/12        | 2.00 (0.21-18.69)   | 0.92      |
| CoDEX                     | NCT04327401                   | High: 20 mg/d intravenously         | 69/128                              | 76/128      | 0.80 (0.49-1.31)    | 18.69     |
| RECOVERY                  | NCT04381936                   | Low: 6 mg/d orally or intravenously | 95/324                              | 283/683     | 0.59 (0.44-0.78)    | 57.00     |
| Subgroup fixed effect     |                               |                                     | 166/459                             | 361/823     | 0.64 (0.50-0.82)    | 76.60     |
| <b>Hydrocortisone</b>     |                               |                                     |                                     |             |                     |           |
| CAPE COVID                | NCT02517489                   | Low: 200 mg/d intravenously         | 11/75                               | 20/73       | 0.46 (0.20-1.04)    | 6.80      |
| COVID STEROID             | NCT04348305                   | Low: 200 mg/d intravenously         | 6/15                                | 2/14        | 4.00 (0.65-24.66)   | 1.39      |
| REMAP-CAP                 | NCT02735707                   | Low: 50 mg every 6 h intravenously  | 26/105                              | 29/92       | 0.71 (0.38-1.33)    | 11.75     |
| Subgroup fixed effect     |                               |                                     | 43/195                              | 51/179      | 0.69 (0.43-1.12)    | 19.94     |
| <b>Methylprednisolone</b> |                               |                                     |                                     |             |                     |           |
| REMAP-CAP                 | NCT02735707                   | Low: 50 mg every 6 h intravenously  | 26/105                              | 29/92       | 0.71 (0.38-1.33)    | 11.75     |



**CONCLUSIONS AND RELEVANCE** In this prospective meta-analysis of clinical trials of critically ill patients with COVID-19, administration of systemic corticosteroids, compared with usual care or placebo, was associated with lower 28-day all-cause mortality.

Odds ratio (95% CI)



# Hydroxychlorochin

- Prevence a léčba malárie, RA, Lupusu, Porfyria cutanea tarda
- NÚ: n



# Meaning

These findings do not support the use of hydroxychloroquine for treatment of COVID-19 among hospitalized adults.

Wesley H. Benson, MD, MPH; Roy G. Brower, MD; Steve Kevin W. Gibbs, MD; Adit A. Gattuso, MD; Catherine L. Hough, MD, MPH; Marc Moss, MD; Pauline K. Ray, MD; Jay S. Steingrub, MD; Christopher M. Brown, MD, MPH

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|---|----------|----------|-------------------|---------------------|
| Patients with ≥1 SAEs reported <sup>i</sup> | 14 (5.8) | 11 (4.6) | 1.1 (-3.0 to 5.2) | 1.26 (0.56 to 2.84) |
|---|----------|----------|-------------------|---------------------|

Abbreviations: ALT, alanine aminotransferase; AST, aspartate aminotransferase; COVID, coronavirus disease; CPR, cardiopulmonary resuscitation; ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit;

<sup>c</sup> The COVID Outcomes Scale is a 7-category ordinal scale that classifies a patient's clinical status.<sup>19</sup> The 7 categories are 1: death; 2: hospitalized, receiving ECMO or invasive mechanical ventilation; 3: hospitalized, receiving



## Surviving Sepsis Campaign: Guidelines on the Management of Critically Ill

24.1.2020 1. případ v Evropě – ½ března dostupné  
SSC

Fan<sup>7</sup>, Simon Oczkowski<sup>1,2</sup>, Mitchell M. Levy,  
Hannah Wunsch<sup>14,15</sup>, Maurizio Cecconi<sup>16,17</sup>,  
Alshamsi<sup>21</sup>, Emilie Belley-Cote<sup>1,22</sup>, Massimil  
Kesecioglu<sup>10</sup>, Allison McGeer<sup>25</sup>, Leonard M  
Arrington<sup>28</sup>, John Centofanti<sup>29</sup>, Giuseppe C.  
Hammond<sup>34,35</sup>, Frederick G. Hayden<sup>36</sup>, Laura Evans<sup>37</sup>, Andrew Rhodes<sup>38</sup>



Amy Dzierba<sup>12</sup>, Bin Du<sup>13</sup>, Michael Aboodi<sup>6</sup>,  
iel S. Chertow<sup>19</sup>, Kathryn Maitland<sup>20</sup>, Faye  
w Laundry<sup>23</sup>, Jill S. Morgan<sup>24</sup>, Jozef  
nen<sup>26</sup>, Paul E. Alexander<sup>2,27</sup>, Amy  
,<sup>32</sup>, Ziad A. Memish<sup>33</sup>, Naomi



RESEARCH

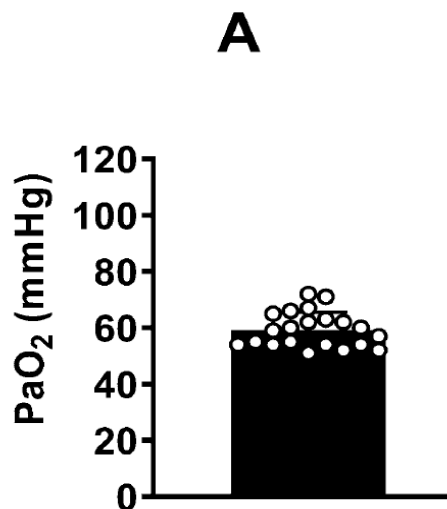
Open Access

# Surgical mask on top of high-flow nasal



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CO  
fail

Virgini  
Maerc



FC  
IFC / surgical mask



**Děkuji za pozornost!**

