UNIVERSITY HOSPITAL BRNO
FACULTY OF MEDICINE
MASARYK UNIVERSITY

DEPARTMENT OF PAEDIATRIC
ANAESTHESIOLOGY
AND INTENSIVE CARE MEDICINE

# TOP publikace z Monitoringu článků AKUTNĚ.CZ

Jozef Klučka

FAKULTNÍ NEMOCNICE BRNO

MUNI MED

# Obsah

- Co je dnes EBM?
- Kde hledat?
- Vybrané články



# Skutečně příběhy ze zdravotnictví č. 1

- Nemocniční zástava v oblastní nemocnici – úspěšná KPR, není k dispozici místo na JIP/ARO - volána RZP (odmítá převézt pacienta, vyžaduje předem domluvit lůžko, čekání na RZP více jak 60 minut – vyjíždí až když domluveno vyšetření na OUP, pokračuje péče na standardním oddělení – UPV/NRA, opak KPR, pacient transportován RZP nakonec stejně jinam jak domluveno, úmrtí do 24 hodin….)

odesílajícího lékaře s lékařem vysoce specializovaného centra, ale jde-li o neodkladnou péči, nelze na takové dohodě trvat. V takové situaci můžete pacienta i bez dohody odeslat do vysoce specializovaného centra a půjde-li skutečně o neodkladnou péči, nesmí být jeho přijetí odmítnuto.

ZZS provádějící sekundární převoz si nemůže klást podmínku dohody s vysoce specializovaným centrem, je povinna bez dalšího příkaz lékaře k neodkladnému převozu pacienta realizovat.

Nejedná se o ZZS JMK

# Skutečně příběhy ze zdravotnictví č. 2

- Pacientka s cca měsíc trvající dušností došetřována u specialistu – iniciálně elevace Ddimerů 0,97, RTG S+P bez patol nálezu, SATO 96% - uzavřeno jako dekomp astma bronchiale
- Potíže trvají, na léčbě bez zlepšení - odeslána na V-P scan

- Nález přichází konzultovat ke svému praktickému lékaři –
- „těžké defekty perfuze na úrovni segmentálních a subsegmentálních větví bilat.“…
- Dušnost trvá…

Pacientku nikdo neinformoval - výsledek odeslán poštou…

# Skutečně příběhy ze zdravotnictví

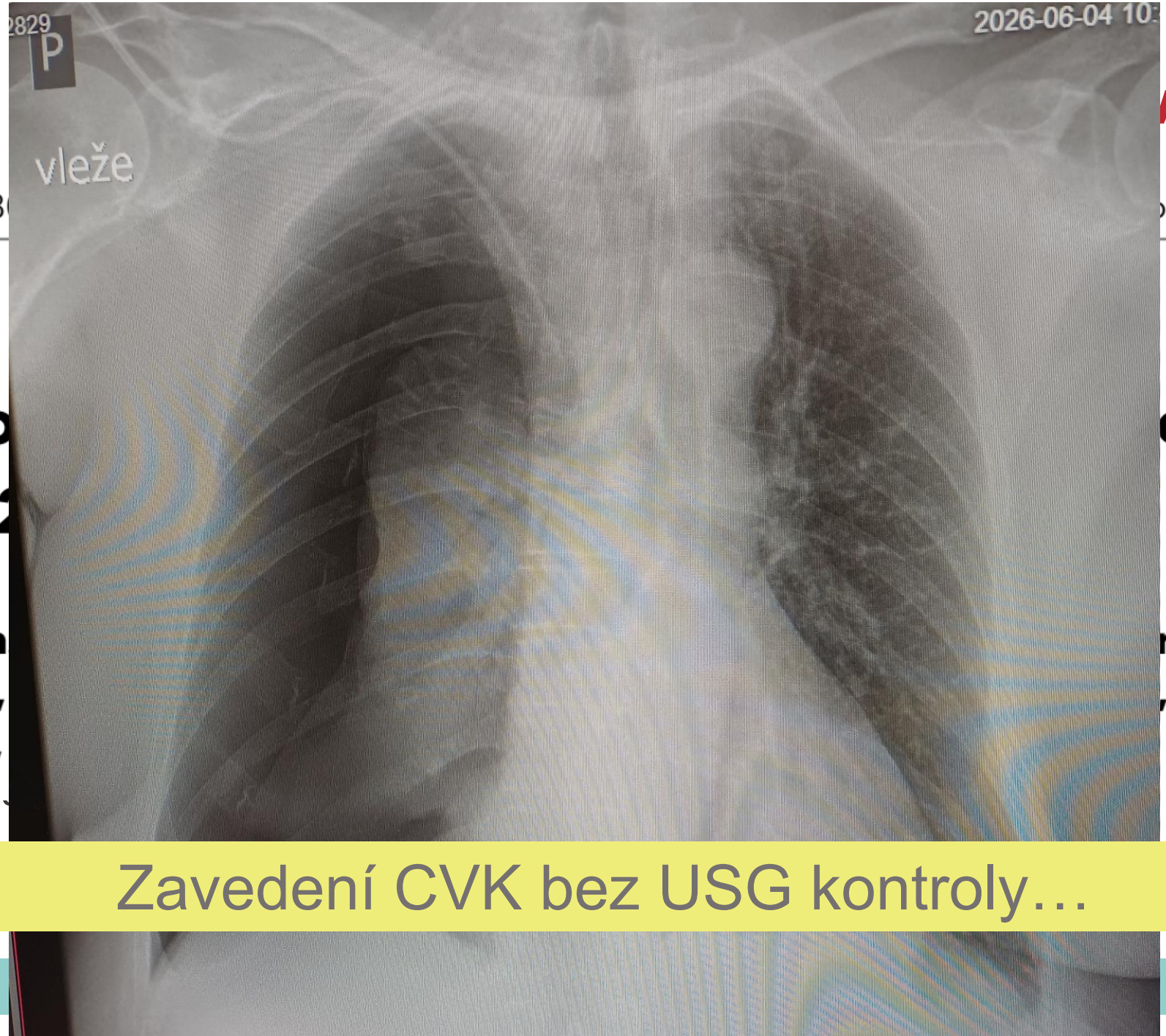
The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 1, 2026 VOL. 395 NO. 13

At

**CONCLUSIONS**

Treatment with atorvastatin led to a lower risk of major cardiovascular events than placebo at a median of 5.9 years but did not result in longer disability-free survival among community-dwelling older adults without clinical cardiovascular disease. (Funded by the National Health and Medical Research Council and others; STAREE ClinicalTrials.gov number, NCT02099123.)



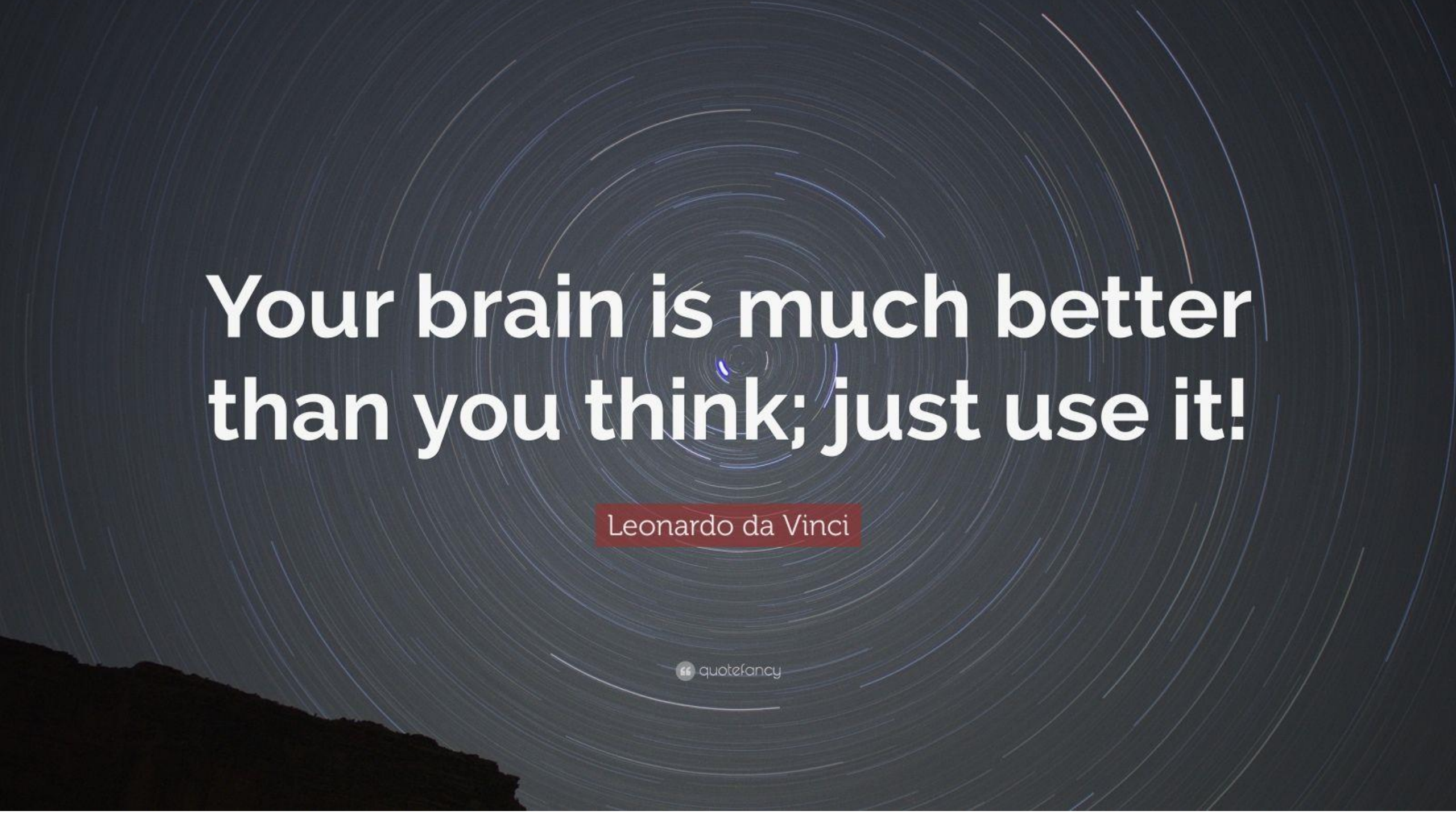

Anaesthesia 2025, 8( ...i:10.1111/anae.16727

Guidelines

# Associatio ...cular access 202...

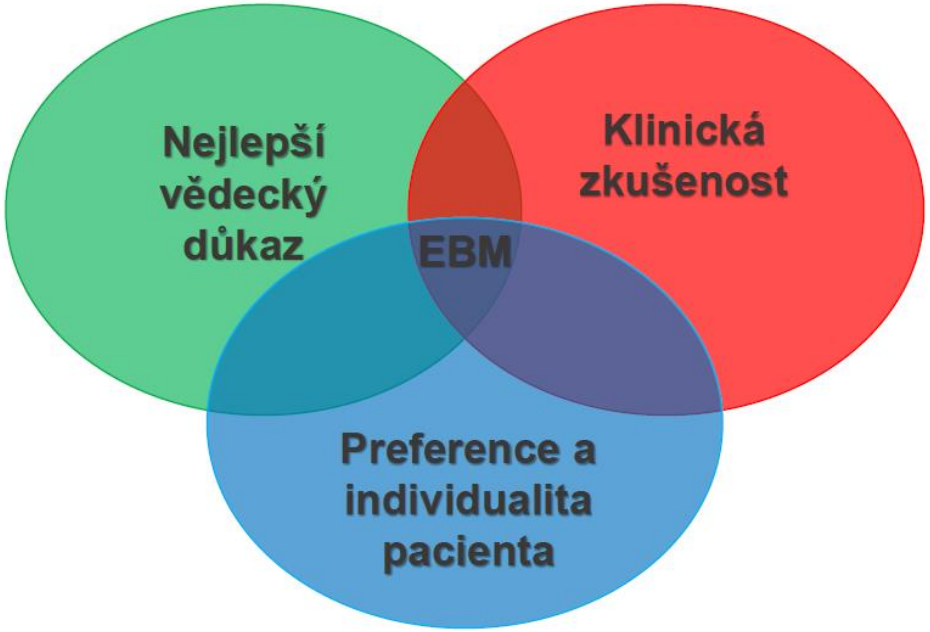
**Andrew J. John ...rton, James Bennett, ..., Dhupal Patel, Teikchoon See, ...**

Zavedení CVK bez USG kontroly…


Your brain is much better than you think; just use it!
Leonardo da Vinci
quotefancy

# Evidence based medicine

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






# Monitoring článků AKUTNĚ.CZ

AKUTNE.CZ®

Aktuality Reportáže Výuka Algoritmy Publikace O nás Nadační fond Kalendář |




## XVIII. Konference AKUTNĚ.CZ

3. 10. 2026

Registrace na konferenci byla spuštěna a už po pár dnech jsme kvůli enormnímu zájmu navýšili kapacitu NLZP sekce. Bohužel ani toto navýšení nepomohlo a nyní je kapacita sekce NLZP skutečně naplněna. Další navýšení již z kapacitních důvodů kampusu není možné. Všechny sekce konference budou přenášeny online, proto pokud jste se nestihli přihlásit, sledujte nás v sobotu 21. 11. online na našem webu.




## Reportáž z XXXII. kongresu České společnosti anesteziologie, resuscitace a intenzivní medicíny

Začátek podzimu má v oboru jasnou konstantu: kongres ČSARIM. Anesteziologie a intenzivní medicína se opět potkávají na jednom místě a my jsme u toho – s reportážním týmem...



## Reportáž z golfového



prof. MUDr. Petr Štourač, Ph.D., MBA, LL.M., FESAIC, MUDr. Jana Šoltysová, MUDr. Mariya Kalantay, Tereza Mezníková, Magdalena Sadílková

Laparoskopické výkony jsou specifické svými dopady na hemodynamické i...

Webináře Akutní středy

Další Akutní středa bude **11. listopadu 2026** – téma **Jak na velké jazykové modely: zkušenosti intenzivisty a statistika s AI v klinice a výzkumu,** přednáší doc. MUDr. Petr Waldauf, Ph.D.

Program

Sborník

Atestační otázky

**225 článků** za poslední rok

**Monitoring článků**

09/2026 08/2026 07/2026

TOP články

Všechny články

2088 přednášek ve 115 sbornících

## 2026
Máme pro vás 168 článků za rok 2026

## 2025
Máme pro vás 210 článků za rok 2025

## 2024
Máme pro vás 233 článků za rok 2024

## 2023
Máme pro vás 289 článků za rok 2023

## 2022
Máme pro vás 299 článků za rok 2022

## 2021
Máme pro vás 274 článků za rok 2021

## 2020
Máme pro vás 297 článků za rok 2020

## 2019
Máme pro vás 330 článků za rok 2019

Sborníky
Akutní středy
Redakční rada
Recenze, anotace knih
Pokyny autorům
Monitoring článků
Posterová sekce konference AKUTNĚ.CZ
Hall of Publication Fame
Publikace in extenso
Abstrakty ve sborníku
Pedagogická díla
Další prezentace na konferenci
Uspořádané odborné akce

Anesteziologie a intenzivní medicína

Česká společnost anesteziologie, resuscitace a intenzivní medicíny

Česká Společnost Intenzivní Medicíny

Česká lékařská společnost J. E. Purkyně



Anest. intenziv. Med. 2025;36(3):226-233

# Zajímavosti z literatury



**Horáček M.** [1,2], **Klučka J.** [3], **Skřišovská T.** [4,5]

[1] *Klinika anesteziologie, resuscitace a intenzivní medicíny, 2. lékařská fakulta Univerzity Karlovy, Praha*

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[3] *Výukový a publikační portál AKUTNĚ.CZ [ISSN 1803-179X], Lékařská fakulta Masarykovy univerzity, Brno*

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Zveřejněno: 30. září 2025

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Sdílet...

# TOP Anesteziologie + urgentní medicína



*Intensive Care Med (2026) 52:1619–1634*
https://doi.org/10.1007/s00134-026-08501-7

**ORIGINAL**

# HIgh versus STAndard blood Pressure target in hypertensive high-risk patients undergoing elective major abdominal surgery: the HISTAP multicenter randomized clinical trial

Patients were eligible for participation if they were aged 60 or older, with chronic hypertension requiring home therapy and on active and stable treatment at the time of the preoperative visit, scheduled for major elective laparoscopic or laparotomic abdominal surgery with an expected duration of at least 3 hrs, and requiring invasive arterial and hemodynamic monitoring as decided by the attending anesthesiologist. In addition, patients had to be at increased risk of postoperative complications, as defined in the study protocol. All enrolled patients were admitted to the hospital with the specific purpose of undergoing planned elective surgery.

## Study design

**18 Italian centers, 630** high-risk **hypertensive patients ≥60 yrs** undergoing **major elective abdominal surgery** of at least 3 hours.

## Intervention

- **Higher MAP target ≥80 mmHg** vs **Standard MAP target ≥65 mmHg**
- Both with **continuous hemodynamic monitoring + protocolized fluid therapy**

## Findings

- **Primary composite endpoint (CJP):** 30-day mortality OR ≥1 major postoperative organ dysfunction

**Findings:** Of 636 randomized patients, 6 were excluded since surgery was canceled after randomization, 630 completed the trial and were included in the intention-to-treat analysis (median age, 74 years [IQR, 69–79]). Mean intraoperative MAP was 77 ± 7 mmHg in the Control group and 88 ± 9 mmHg in the Treatment group. The primary composite outcome occurred in 48.9% of patients in the Control group versus 38.1% of patients in the Treatment

- **Main driver of benefit: Lower AKI incidence**
  - **23.5% vs 33.7% (P=0.005)**
  - Mainly **mild-to-moderate AKI**

# Vyšší vs. nižší MAP

- Intraoperační hypotenze = ↓ outcome
- 15 studií (15 603 pacientů)
- Nekardiochirurgické operace
- Vyšší MAP (>85 mmHg vs. 60-65 mmHg)
- Primární cíl – nemocniční a 30-denní mortalita, AKI, pooperační delirium, 30 denní KVS morbidita (IM, CMP)

ANESTHESIOLOGY®

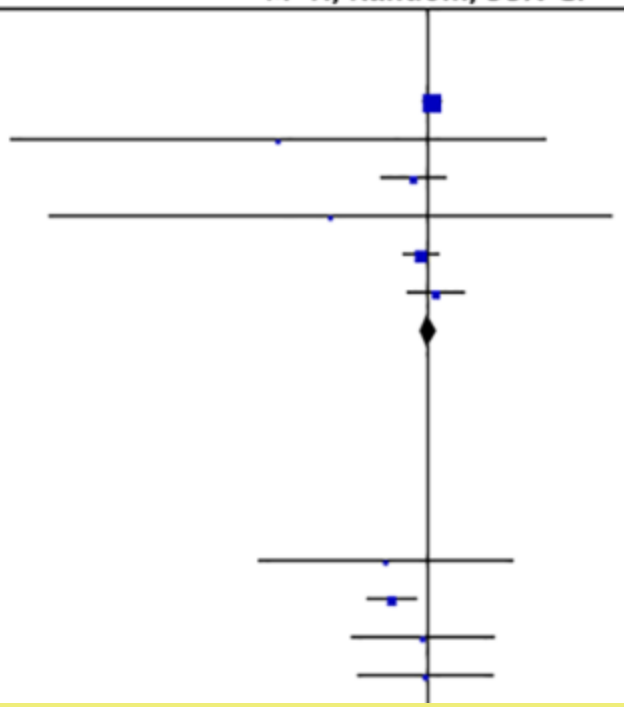
**Higher *versus* Routine Intraoperative Blood Pressure Targets in Noncardiac Surgery: A Systematic Review and Meta-analysis with Trial Sequential Analysis of Randomized Trials**

Katie Chiou, M.D., Sovann Vikram, B.S., Kiana Rowshan, M.D., M.P.H., Smeet Shah, B.S., Dolly Modha, B.S., Edgard Engelman, M.D., David Guthrie, R.N., C.R.N.A., Anil Tiwari, M.D., Joseph Rinehart, M.D., Alexandre Joosten, M.D., Ph.D., Bernd Saugel, M.D., Sean Coeckelenbergh, M.D., Ph.D.

*ANESTHESIOLOGY 2026; 145:872–88*

**A**

| Study or Subgroup | Higher Target Events | Higher Target Total | Routine Target Events | Routine Target Total | Weight | Risk Ratio M-H, Random, 95% CI |
|---|---|---|---|---|---|---|
| **Acute kidney injury** | | | | | | |
| **Fixed Target** | | | | | | |
| Garg 2025 | 530 | 3502 | 505 | 3504 | 36.2% | 1.05 [0.94, 1.18] |
| Hu 2021 | 0 | 155 | 2 | 143 | 0.1% | 0.18 [0.01, 3.81] |
| Kant 2025 | 49 | 1618 | 58 | 1629 | 7.7% | 0.85 [0.59, 1.24] |
| Wang-2 2025 | 0 | 71 | 1 | 71 | 0.1% | 0.33 [0.01, 8.05] |
| Wanner 2021 | 96 | 225 | 104 | 226 | 19.3% | 0.93 [0.75, 1.14] |
| Zhao 2025 | 68 | 739 | 62 | 738 | 9.6% | 1.10 [0.79, 1.52] |
| **Subtotal (95% CI)** | | **6310** | | **6311** | **73.2%** | **1.01 [0.92, 1.11]** |
| Total events | 743 | | 732 | | | |
| Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 3.84$, df = 5 (P = 0.57); $I^2 = 0\%$ | | | | | | |
| Test for overall effect: Z = 0.27 (P = 0.79) | | | | | | |
| **Personalized Target** | | | | | | |
| Bergholz 2024 | 3 | 53 | 4 | 44 | 0.6% | 0.62 [0.15, 2.63] |
| Futier 2017 | 48 | 147 | 71 | 145 | 12.1% | 0.67 [0.50, 0.89] |
| Li 2026 | 10 | 74 | 10 | 70 | 1.8% | 0.95 [0.42, 2.13] |
| Nicklas 2024 | 12 | 166 | 12 | 162 | 2.0% | 0.98 [0.45, 2.11] |



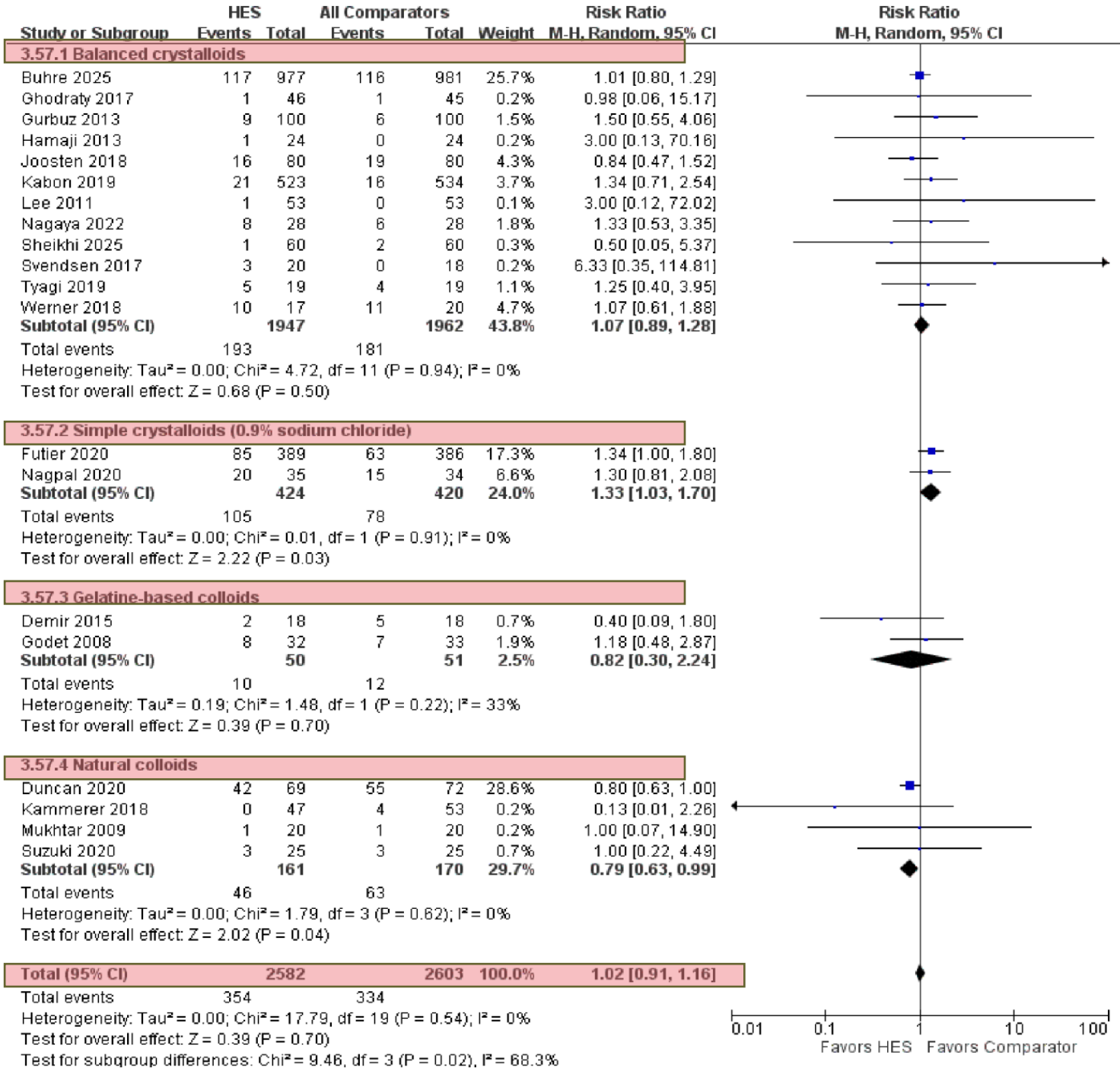

U pacientů podstupujících elektivní nekardiochirurgickou operaci nevedlo cílení na vyšší hodnotu MAP k redukci KVS morbidity a mortality, bez efektu na výskyt AKI. Redukce výskytu deliria vyžaduje další výzkum.

Test for subgroup differences: Chi² = 2.09, df = 1 (P = 0.15), I² = 52.2%

# HES a perioperační komplikace

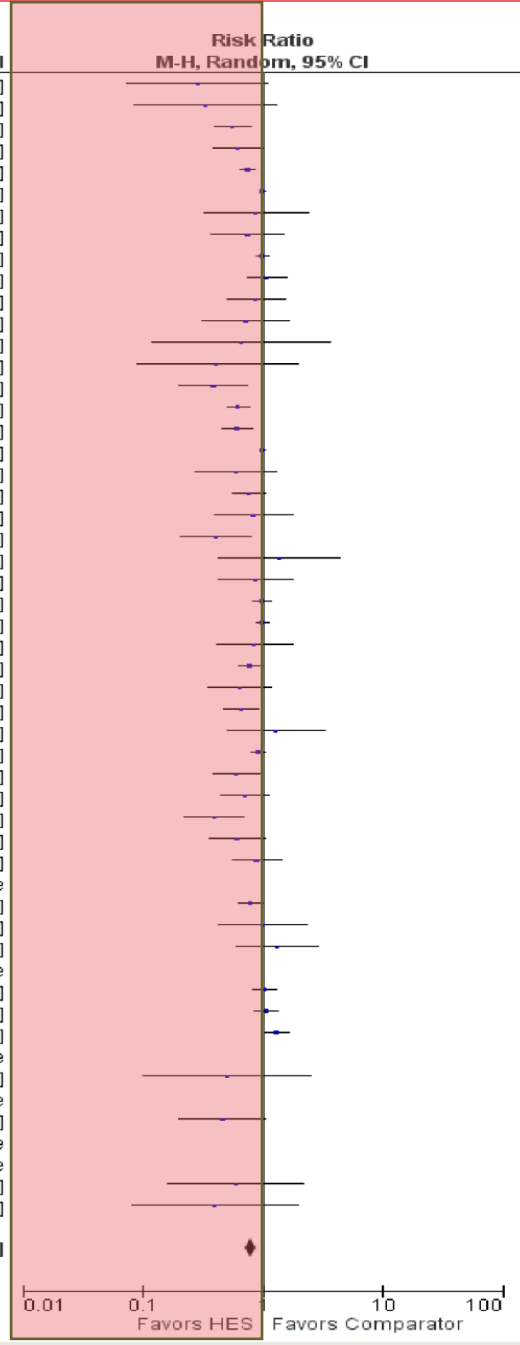
- Varování FDA 2021/EU 2022 HES u chirurgických a trauma pacientů
- Renální poškození – HES 130/0.4
- 114 studií (13 951 pacientů) 2009-2026
- Primární outcome – riziko AKI a hladina kreatininu

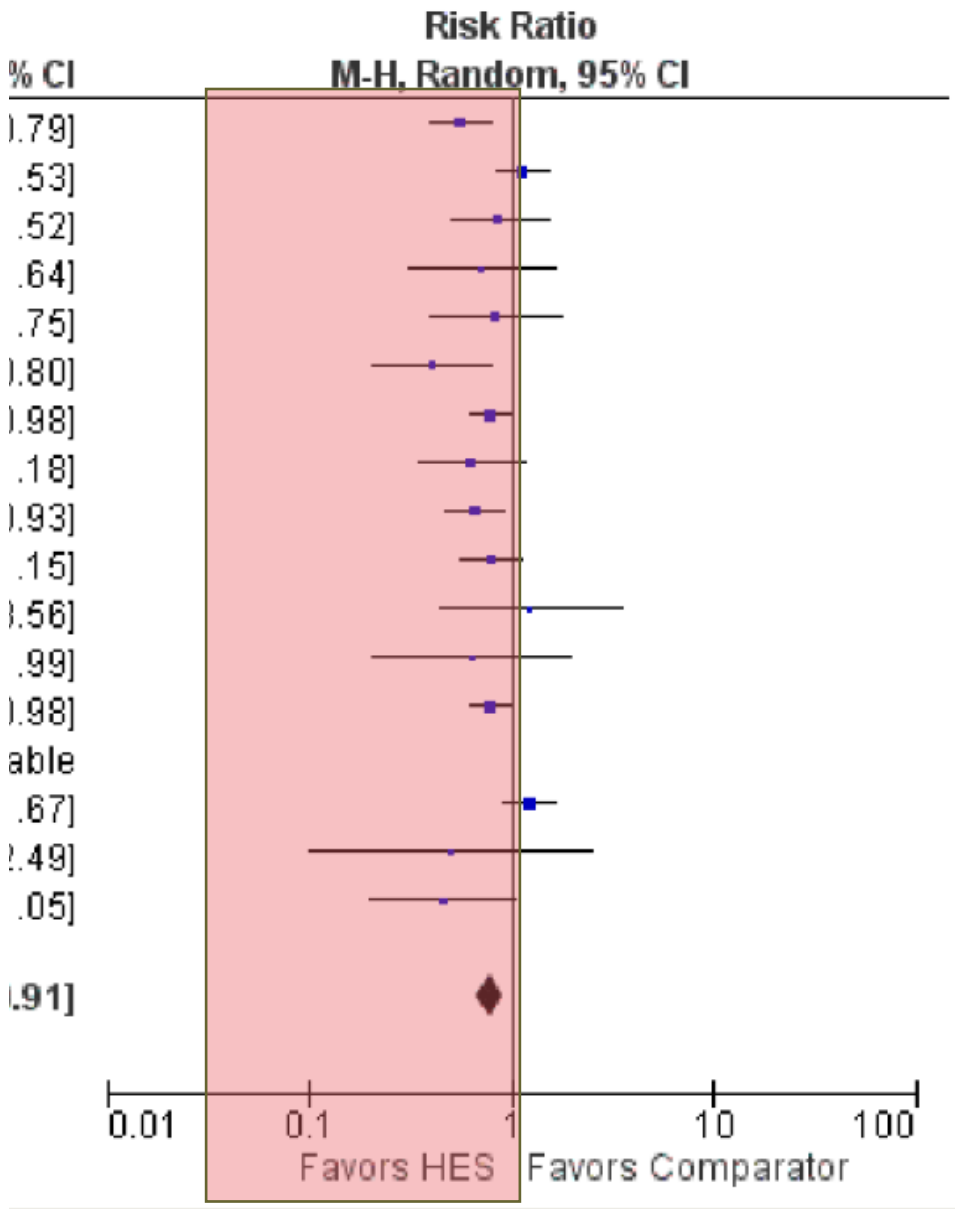



HES
All Comparators
Risk Ratio
Risk Ratio
Study or Subgroup Events Total Events Total Weight M-H, Random, 95% CI
M-H, Random, 95% CI
3.57.1 Balanced crystalloids
Buhre 2025 117 977 116 981 25.7% 1.01 [0.80, 1.29]
Ghodraty 2017 1 46 1 45 0.2% 0.98 [0.06, 15.17]
Gurbuz 2013 9 100 6 100 1.5% 1.50 [0.55, 4.06]
Hamaji 2013 1 24 0 24 0.2% 3.00 [0.13, 70.16]
Joosten 2018 16 80 19 80 4.3% 0.84 [0.47, 1.52]
Kabon 2019 21 523 16 534 3.7% 1.34 [0.71, 2.54]
Lee 2011 1 53 0 53 0.1% 3.00 [0.12, 72.02]
Nagaya 2022 8 28 6 28 1.8% 1.33 [0.53, 3.35]
Sheikhi 2025 1 60 2 60 0.3% 0.50 [0.05, 5.37]
Svendsen 2017 3 20 0 18 0.2% 6.33 [0.35, 114.81]
Tyagi 2019 5 19 4 19 1.1% 1.25 [0.40, 3.95]
Werner 2018 10 17 11 20 4.7% 1.07 [0.61, 1.88]
Subtotal (95% CI) 1947 1962 43.8% 1.07 [0.89, 1.28]
Total events 193 181
Heterogeneity: Tau² = 0.00; Chi² = 4.72, df = 11 (P = 0.94); I² = 0%
Test for overall effect: Z = 0.68 (P = 0.50)
3.57.2 Simple crystalloids (0.9% sodium chloride)
Futier 2020 85 389 63 386 17.3% 1.34 [1.00, 1.80]
Nagpal 2020 20 35 15 34 6.6% 1.30 [0.81, 2.08]
Subtotal (95% CI) 424 420 24.0% 1.33 [1.03, 1.70]
Total events 105 78
Heterogeneity: Tau² = 0.00; Chi² = 0.01, df = 1 (P = 0.91); I² = 0%
Test for overall effect: Z = 2.22 (P = 0.03)
3.57.3 Gelatine-based colloids
Demir 2015 2 18 5 18 0.7% 0.40 [0.09, 1.80]
Godet 2008 8 32 7 33 1.9% 1.18 [0.48, 2.87]
Subtotal (95% CI) 50 51 2.5% 0.82 [0.30, 2.24]
Total events 10 12
Heterogeneity: Tau² = 0.19; Chi² = 1.48, df = 1 (P = 0.22); I² = 33%
Test for overall effect: Z = 0.39 (P = 0.70)
3.57.4 Natural colloids
Duncan 2020 42 69 55 72 28.6% 0.80 [0.63, 1.00]
Kammerer 2018 0 47 4 53 0.2% 0.13 [0.01, 2.26]
Mukhtar 2009 1 20 1 20 0.2% 1.00 [0.07, 14.90]
Suzuki 2020 3 25 3 25 0.7% 1.00 [0.22, 4.49]
Subtotal (95% CI) 161 170 29.7% 0.79 [0.63, 0.99]
Total events 46 63
Heterogeneity: Tau² = 0.00; Chi² = 1.79, df = 3 (P = 0.62); I² = 0%
Test for overall effect: Z = 2.02 (P = 0.04)
Total (95% CI) 2582 2603 100.0% 1.02 [0.91, 1.16]
Total events 354 334
Heterogeneity: Tau² = 0.00; Chi² = 17.79, df = 19 (P = 0.54); I² = 0%
Test for overall effect: Z = 0.39 (P = 0.70)
Test for subgroup differences: Chi² = 9.46, df = 3 (P = 0.02), I² = 68.3%
0.01
0.1
1
10
100
Favors HES
Favors Comparator

| Study or Subgroup | HES Events | HES Total | All Comparators Events | All Comparators Total | Weight | Risk Ratio M-H, Random, 95% CI |
|---|---|---|---|---|---|---|
| Alimian 2014 BC | 2 | 15 | 14 | 30 | 0.5% | 0.29 [0.07, 1.10] |
| Alimian 2014 SC | 2 | 15 | 12 | 30 | 0.4% | 0.33 [0.09, 1.30] |
| Bennasr 2014 | 24 | 60 | 43 | 60 | 2.8% | 0.56 [0.39, 0.79] |
| Bouchnak 2012 | 13 | 30 | 21 | 30 | 2.2% | 0.62 [0.39, 0.99] |
| Buhre 2025 | 254 | 977 | 343 | 981 | 4.2% | 0.74 [0.65, 0.85] |
| Chen 2023 | 40 | 40 | 40 | 40 | 4.5% | 1.00 [0.95, 1.05] |
| Cho 2023 | 5 | 19 | 6 | 20 | 0.7% | 0.88 [0.32, 2.40] |
| El-Mekawy 2012 | 9 | 30 | 12 | 30 | 1.3% | 0.75 [0.37, 1.51] |
| Futier 2020 | 242 | 389 | 240 | 386 | 4.3% | 1.00 [0.90, 1.12] |
| Godet 2008 | 21 | 32 | 20 | 33 | 2.7% | 1.08 [0.75, 1.57] |
| Haentjens 2009 | 16 | 56 | 19 | 58 | 1.8% | 0.87 [0.50, 1.52] |
| Hayes 2012 | 8 | 56 | 11 | 56 | 1.0% | 0.73 [0.32, 1.67] |
| Hemachandiran 2025 | 2 | 30 | 3 | 30 | 0.3% | 0.67 [0.12, 3.71] |
| Honkonen 2009 | 2 | 24 | 5 | 25 | 0.4% | 0.42 [0.09, 1.95] |
| Jiang 2021 | 7 | 23 | 18 | 23 | 1.4% | 0.39 [0.20, 0.75] |
| Joosten 2018 | 44 | 80 | 71 | 80 | 3.7% | 0.62 [0.50, 0.77] |
| Juri 2017 | 24 | 45 | 39 | 45 | 3.2% | 0.62 [0.46, 0.83] |
| Kammerer 2018 | 47 | 47 | 53 | 53 | 4.5% | 1.00 [0.96, 1.04] |
| Kancir 2014 | 6 | 19 | 10 | 19 | 1.1% | 0.60 [0.27, 1.32] |
| Kancir 2015 | 13 | 18 | 17 | 18 | 3.1% | 0.76 [0.56, 1.04] |
| Ko 2007 CSA | 10 | 50 | 12 | 50 | 1.2% | 0.83 [0.40, 1.75] |
| Ko 2007 No CSA | 9 | 50 | 22 | 50 | 1.4% | 0.41 [0.21, 0.80] |
| Krebbel 2014 | 5 | 19 | 4 | 21 | 0.6% | 1.38 [0.43, 4.40] |
| László 2019 | 7 | 15 | 8 | 15 | 1.3% | 0.88 [0.43, 1.80] |
| Lee 2011 | 43 | 53 | 44 | 53 | 3.9% | 0.98 [0.82, 1.17] |
| Lindroos 2014 | 15 | 15 | 15 | 15 | 4.2% | 1.00 [0.88, 1.13] |
| L'Hermite 2013 | 9 | 27 | 9 | 23 | 1.2% | 0.85 [0.41, 1.78] |
| Madi-Jebara 2008 | 39 | 61 | 48 | 59 | 3.6% | 0.79 [0.63, 0.98] |
| Matsota 2015 | 7 | 15 | 11 | 15 | 1.6% | 0.64 [0.34, 1.18] |
| Mercier 2014 | 30 | 82 | 47 | 85 | 2.9% | 0.66 [0.47, 0.93] |
| Nagpal 2020 | 8 | 35 | 6 | 34 | 0.8% | 1.30 [0.50, 3.34] |
| Obradovic 2020 | 53 | 62 | 54 | 58 | 4.2% | 0.92 [0.81, 1.04] |
| Obradovic 2024 | 13 | 29 | 23 | 31 | 2.2% | 0.60 [0.38, 0.95] |
| Park 2022 | 17 | 50 | 24 | 50 | 2.1% | 0.71 [0.44, 1.15] |
| Pratyusha 2023 | 16 | 318 | 40 | 312 | 1.8% | 0.39 [0.22, 0.69] |
| Razavi 2018 before SA | 10 | 24 | 17 | 25 | 1.8% | 0.61 [0.36, 1.06] |
| Razavi 2018 during SA | 14 | 25 | 15 | 24 | 2.2% | 0.90 [0.56, 1.43] |
| Reiterer 2019 | 0 | 40 | 0 | 40 | | Not estimable |
| Romdhani 2014 | 33 | 48 | 46 | 53 | 3.7% | 0.79 [0.64, 0.98] |
| Santos 2022 | 8 | 30 | 8 | 30 | 1.0% | 1.00 [0.43, 2.31] |
| Schramko 2009 | 8 | 15 | 6 | 15 | 1.1% | 1.33 [0.61, 2.91] |
| Singh 2009 | 0 | 30 | 0 | 30 | | Not estimable |
| Skhirtladze 2014 BC | 31 | 41 | 57 | 79 | 3.7% | 1.05 [0.84, 1.31] |
| Skhirtladze 2014 NC | 30 | 40 | 53 | 76 | 3.6% | 1.08 [0.85, 1.36] |
| Tawfik 2014 | 70 | 103 | 53 | 102 | 3.6% | 1.31 [1.04, 1.64] |
| Theodoraki 2023 | 0 | 51 | 0 | 49 | | Not estimable |
| Turker 2011 | 2 | 25 | 4 | 25 | 0.3% | 0.50 [0.10, 2.49] |
| Tyagi 2019 | 0 | 19 | 0 | 19 | | Not estimable |
| Unlugenc 2015 | 6 | 30 | 13 | 30 | 1.0% | 0.46 [0.20, 1.05] |
| Volta 2017 BC | 0 | 6 | 0 | 12 | | Not estimable |
| Volta 2017 GBC | 0 | 6 | 0 | 12 | | Not estimable |
| Xia 2014 | 3 | 20 | 5 | 20 | 0.5% | 0.60 [0.17, 2.18] |
| Zhang 2017 | 2 | 59 | 5 | 59 | 0.3% | 0.40 [0.08, 1.98] |
| **Total (95% CI)** | | **3498** | | **3618** | **100.0%** | **0.80 [0.73, 0.88]** |
| Total events | 1279 | | 1646 | | | |

Heterogeneity: Tau² = 0.05; Chi² = 289.07, df = 46 (P < 0.00001); I² = 84%
Test for overall effect: Z = 4.59 (P < 0.00001)




hydroxyethyl starch; M-H, Mantel–Haenszel; SA, spinal

**Fig. 7.** Vasopressor use. BC, balanced crystalloids; CSA, combined spinal anesthesia; GBC, gelatin-based colloids; HES, hydroxyethyl starch; NC, natural colloids (albumin); M-H, Mantel–Haenszel; SA, spinal anesthesia; SC, simple crystalloids.

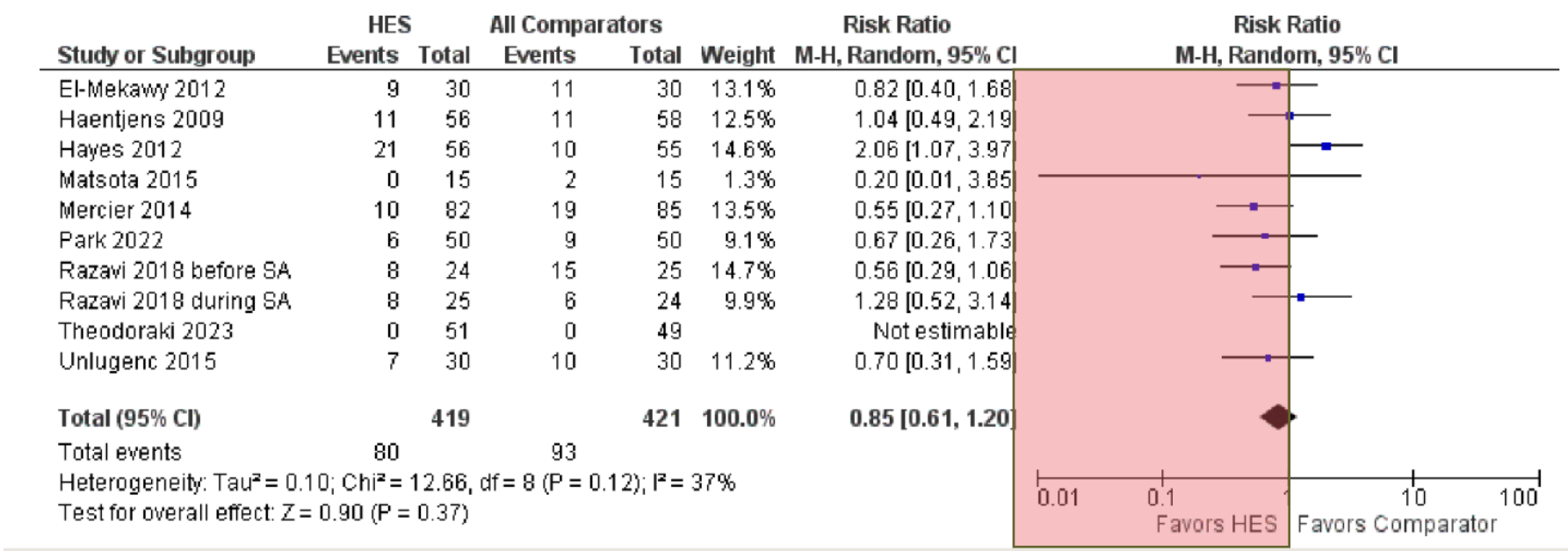



**Fig. 4.** Postoperative nausea incidence. HES, hydroxyethyl starch; M-H, Mantel–Haenszel; SA, spinal anesthesia.

Moderní HES nevedl k zvýšení incidence AKI, nebo zvýšení kreatininu, měl trend k snížení pooperační nauzei a zvracení a jeho podání bylo spojeno s nižším výskytem perioperační hypotenze a nutnosti aplikace vasopresorů.

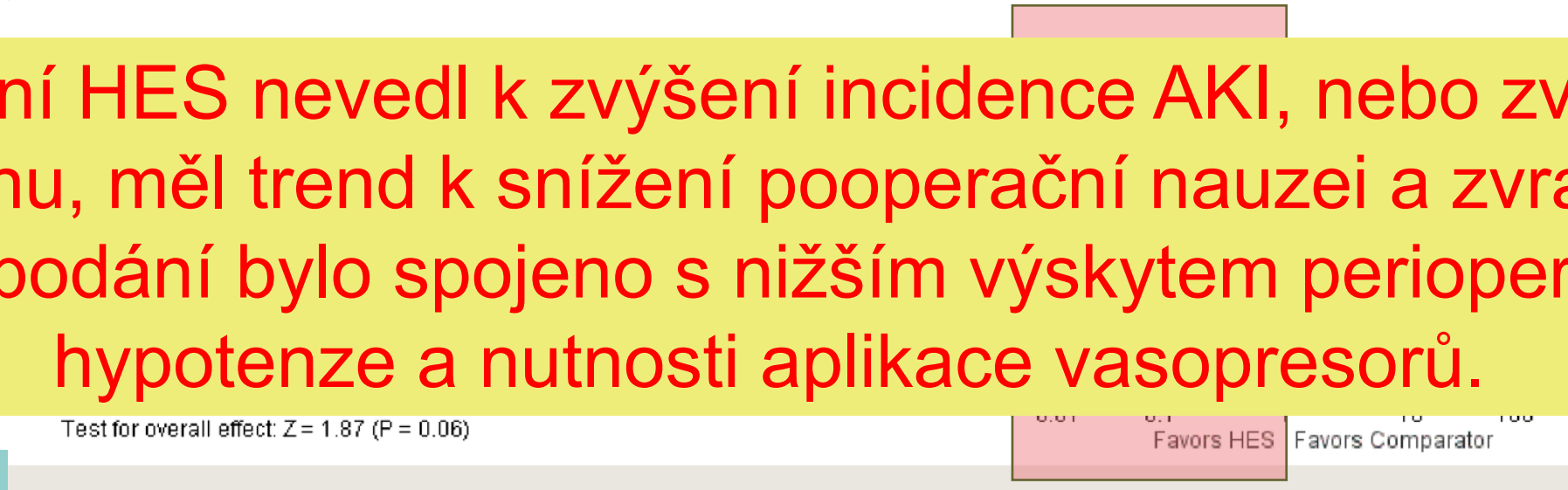



**Fig. 5.** Postoperative vomiting incidence. HES, hydroxyethyl starch; M-H, Mantel–Haenszel; SA, spinal anesthesia.

Anaesthesia 2025, 80 ... oi:10.1111/anae.16727

Guidelines

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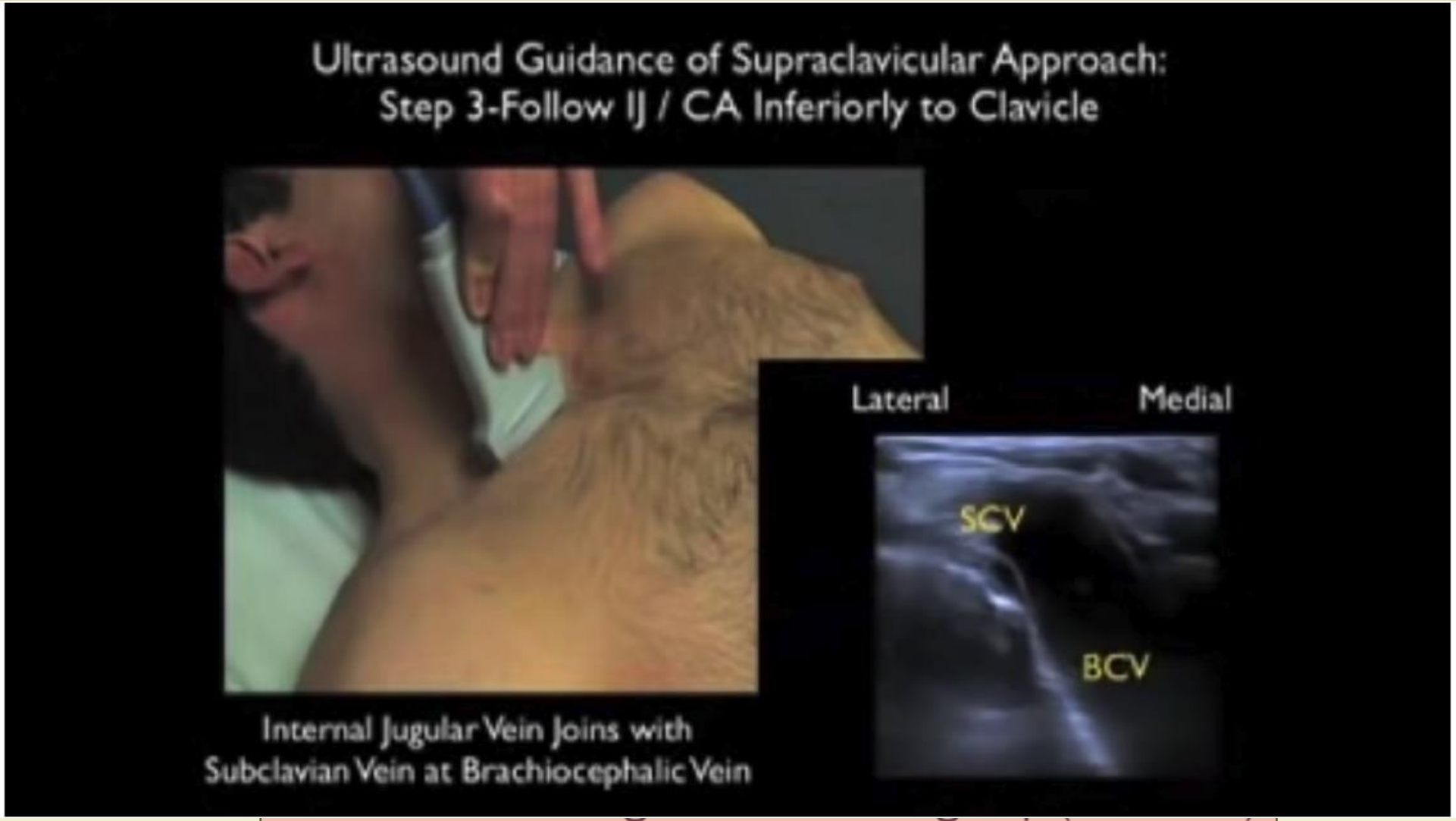
**Table 2. Composite Risk Score With Subscores of Patients With Successful Attempts as Randomized**




**RESULTS**
pared to
MISP te
CI, 74.6
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needed to
each). The

Data are presented as mean ± SD or n (%) and were compared using Mann-Whitney U or $\chi^2$ tests. Study group MISP = microconvex in-plane subclavian puncture.
In the control group, the landmark technique after ultrasound prescan was used.
Abbreviations: CVC, central venous catheter; MISP, microconvex in-plane subclavian puncture.

Anaesthesia 2026, 81, 1400–1414 https://doi.org/10.1111/anae.70249

(b)

(c)

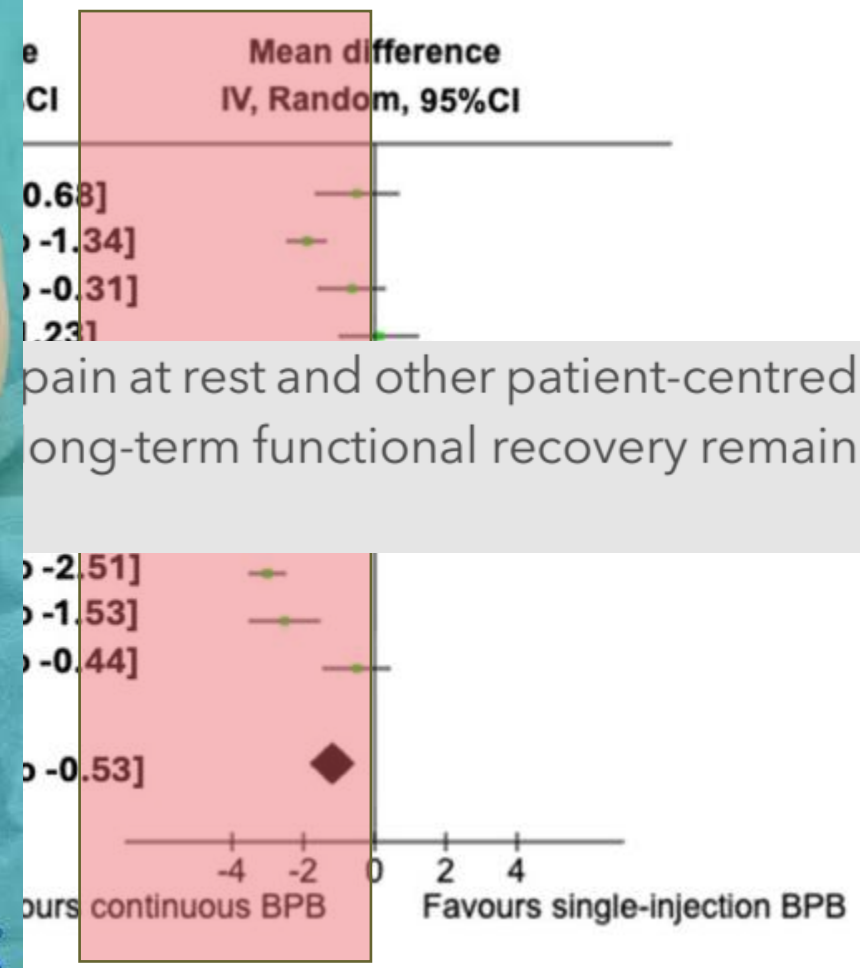
| Study or Subgroup | Continuous BPB Mean | SD | To |
|---|---|---|---|
| Borgeat [36] | 1.1 | 1.9 | |
| Borgeat [37] | 0.5 | 0.4 | |
| Borgeat [38] | 0.18 | 0.4 | |
| Fredrickson [47] | 3.27 | 2.05 | |
| Malik [48] | 1.19 | 0.92 | |
| Mariano [46] | 1.12 | 1.38 | |
| Rhyner [45] | 1 | 1.59 | |
| **Total (Wald[a])** | | | |

Test for overall effect: Z = 3.53 (P = 0.0004)

Heterogeneity: Tau² (REML[b]) = 1.04; Chi² = 93

[a]Tau² calculated by Restricted Maximum-Likelihood method.




**Discussion** Continuous brachial pain at rest and other patient-centred outcomes following shoulder sur ong-term functional recovery remain uncertain.

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Guidelines

# Peri-ope
# multidis

Anne Rüggeb
Anne Marie C
Alexander Na



**Table 2. Primary and Secondary Outcomes.***

| Outcome | Tranexamic Acid (N=4156) | Placebo (N=4117) | Effect Estimate (95% CI) |
|---|---|---|---|
| Primary effectiveness outcome: red-cell transfusion during index hospitalization — no. (%) | 306 (7.4) | 403 (9.8) | 0.73 (0.61 to 0.86)†‡ |
| Primary safety outcome: diagnosis of venous thromboembolism within 90 days — no./total no. (%) | | | |
| Deep-vein thrombosis — no. | <6** | <6** | NA |
| Pulmonary embolism — no. (%) | 8 (0.2) | 6 (0.1) | NA |
| Hospital length of stay — days | 6.20±8.89 | 6.26±9.42 | −0.15 (−0.69 to 0.29)‖ |
| Intensive care unit admission — no. (%) | 693 (16.7) | 721 (17.5) | −0.01 (−0.03 to 0.02)†† |
| Hospital survival — no. (%) | 4112 (98.9) | 4076 (99.0) | NA |
| Overall survival at 90 days — no. (%) | 4066 (97.8) | 4017 (97.6) | 0.95 (0.71 to 1.28)‡‡ |
| Median days alive and out of hospital to day 30 (IQR) | 26 (22 to 27) | 26 (22 to 27) | 0.03 (−0.33 to 0.39)‖ |


## CONCLUSIONS

Among patients undergoing major noncardiac surgery, a hospital policy of tranexamic acid administration resulted in a lower incidence of red-cell transfusion than placebo administration, and tranexamic acid was noninferior to placebo with regard to diagnosis of venous thromboembolism. (Funded by the Canadian Institutes of Health Research and others; TRACTION ClinicalTrials.gov number, NCT04803747.)

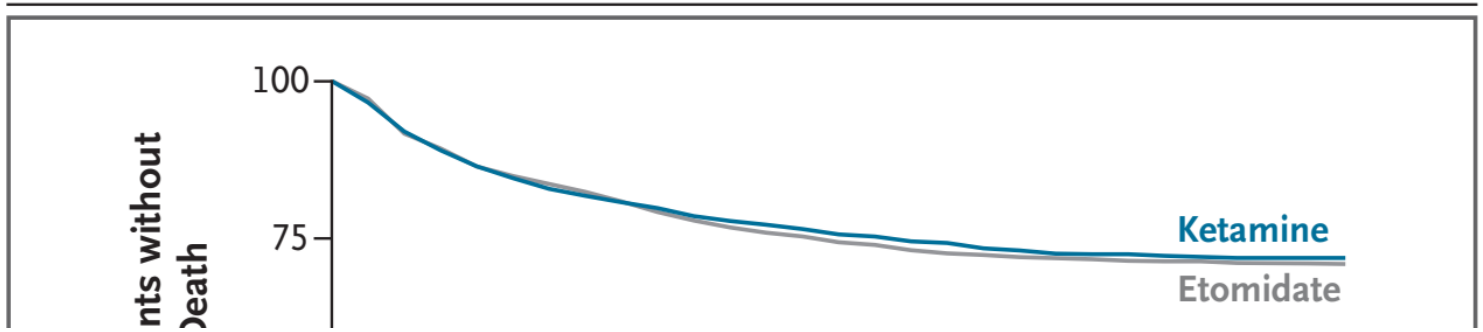
# TOP Intenzivní medicína



ICU v roce 1953




ICU v roce 2026




## CONCLUSIONS

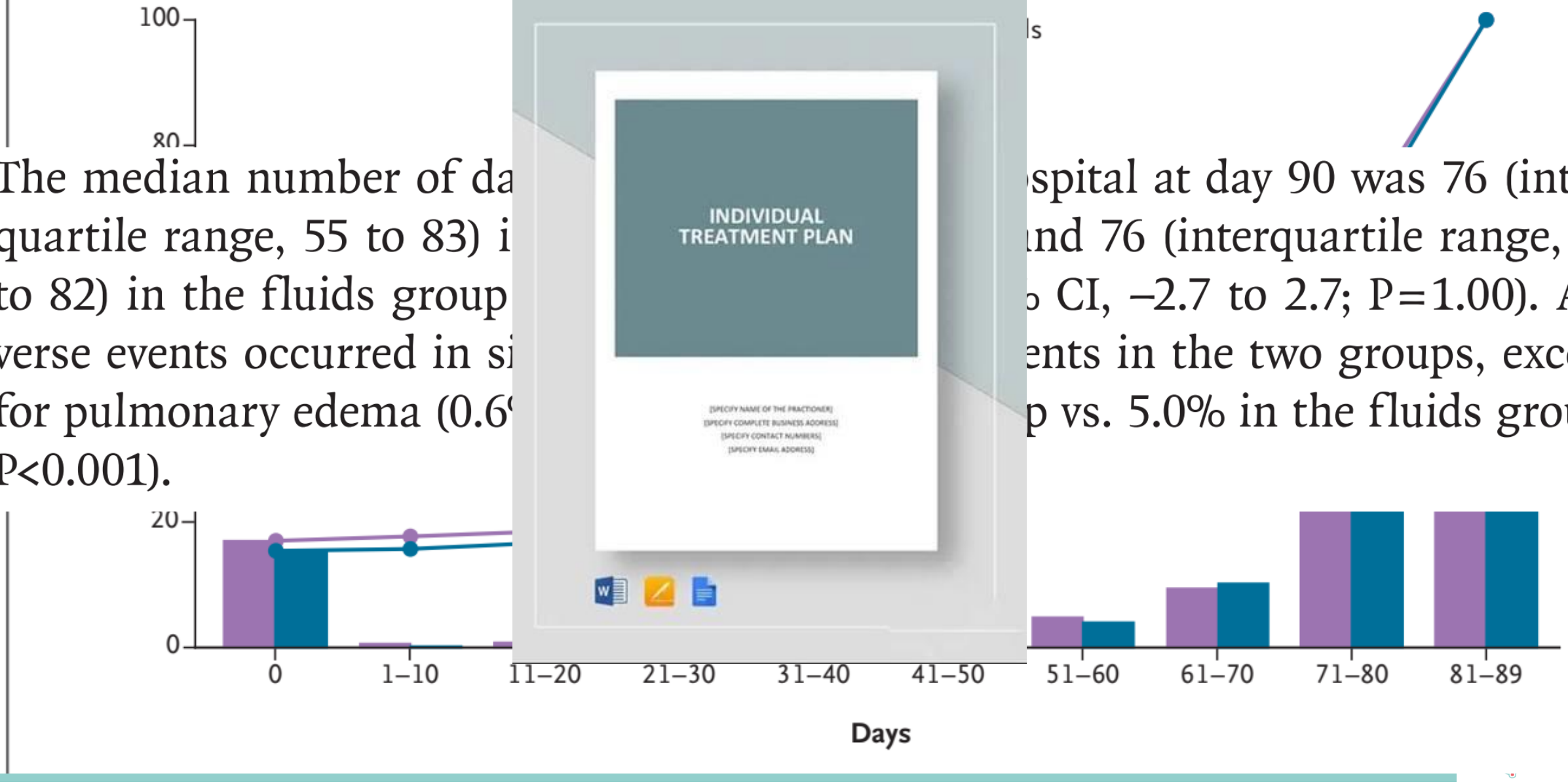
Among critically ill adults undergoing tracheal intubation, the use of ketamine to induce anesthesia did not result in a significantly lower incidence of in-hospital death by day 28 than etomidate. (Funded by the Patient-Centered Outcomes Research Institute and others; RSI ClinicalTrials.gov number, NCT05277896.)

| | | | |
|---|---|---|---|
| Cardiac arrest¶ | 12 (1.0) | 10 (0.8) | 0.2 (–0.6 to 1.0) |

ment through day 28. The incidence of in-hospital death by day 28 (the primary outcome) did not differ significantly between the ketamine group (28.1%) and the etomidate group (29.1%) (risk difference adjusted for trial site, –0.8 percentage points; 95% CI, –4.5 to 2.9; P=0.65 by a generalized linear mixed-effects model with a random effect for trial site).

- N= 2365

**A** Days Alive and out of the Hospital from Randomization to Day 90







The median number of da spital at day 90 was 76 (inter-quartile range, 55 to 83) i nd 76 (interquartile range, 55 to 82) in the fluids group CI, –2.7 to 2.7; P=1.00). Adverse events occurred in si ents in the two groups, except for pulmonary edema (0.6 p vs. 5.0% in the fluids group; P<0.001).

ORIGINAL ARTICLE

**Table 2.** Primary and Secondary Outcomes.*

| Outcome | Oxygen 54) | Difference (95% CI)† | P Value |
|---|---|---|---|
| (IQR) — hr | | | |
| Median ventilator-free time at day 28 (IQR) — | o 28) | 2.0 (0.0 to 4.0) | — |

## CONCLUSIONS

Among patients with acute re, the use of oxygen delivered through a high-flow nasal tly reduce mortality at day 28. (Funded by the French Mi and Paykel Healthcare; SOHO ClinicalTrials.gov number



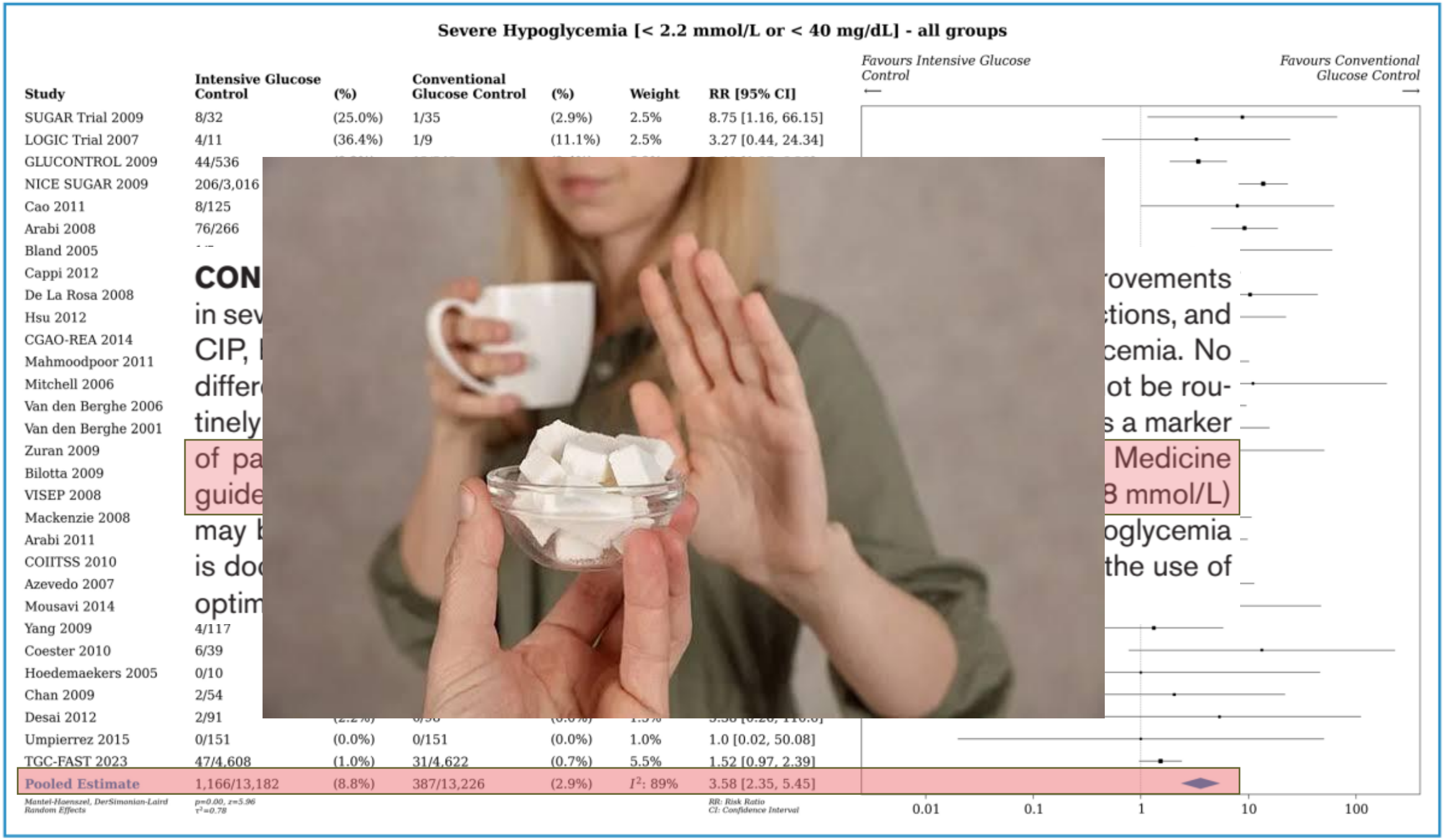



**Figure 5.** Severe hypoglycemia *forest plot*. RR = risk ratio.

**TABLE 1.**
**Summary of Included Randomized Controlled Trials in This Meta-Analysis**

| Author, Year | Country | Patients Type | No. of Patients (I/C) | Medication Administration | Primary Outcome |
|---|---|---|---|---|---|
| Inhaled antibiotics vs. placebo/blank | | | | | |
| Le Conte et al (27), 2000 | France | Mixed VAP | 21/17 | Tobramycin vs. placebo | ① |
| Palmer et al (28), 2008 | United States | Mixed VAP | 19/24 | Vancomycin or gentamicin or both vs. placebo | ②, ③ |
| Yu et al (29), 2010 | China | VAP | 20/21 | Colistin vs. blank | ① |
| Rattanaumpawan et al (30), 2010 | Thailand | VAP | 51/49 | Colistin vs. placebo | ① |
| Angermair et al (25), 2023 | Germany | VAP | 14/12 | Tobramycin vs. placebo | ④ |
| Maan et al (24), 2023 | India | VAP | 50/50 | Colistin vs. placebo | ④ |
| Fatah et al (26), 2024 | Egypt | VAP | 30/30 | Colistin vs. blank | ① |
| Huang et al (22), 2024 | Taiwan, China | VAP | 32/28 | Colistin vs. blank | ③ |
| Ghosh (23), 2024 | India | Mixed VAP | 11/13 | Colistin vs. blank | ① |

(*Continued*)

| Author, Year | Country | Patients Type | No. of Patients (I/C) | Medication Administration | Primary Outcome |
|---|---|---|---|---|---|
| Inhaled vs. IV administration of the same antibiotics | | | | | |
| Hallal et al (9), 2007 | United States | VAP | 5/5 | Inhale vs. IV tobramycin | ① |
| Lu et al (47), 2011 | France | VAP | 20/20 | Inhale vs. IV ceftazidime + amikacin | ① |
| Abdellatif et al (48) | Tunisia | Mixed VAP | 73/76 | Inhale vs. IV colistin | ④ |

RCTs in sensitivity analysis. Compared with placebo/blank, inhaled antibiotics significantly improved clinical cure (16 RCTs; $n = 1425$; risk ratio [RR], 1.24; 95% CI, 1.07–1.43) and reduced all-cause mortality (21 RCTs; $n = 1855$; RR, 0.84; 95% CI, 0.71–0.98), with consistent findings in sensitivity analyses in-

**CONCLUSIONS:** Compared with placebo/blank, adjunctive inhaled antibiotics improve clinical cure and microbiological eradication, and may reduce mortality, particularly in VAP-only patients. Exploratory analyses based on limited data suggest potential advantages over IV therapy, including shorter ventilator duration and lower nephrotoxicity, warranting further high-quality trials.

https://doi.org/10.1186/s13054-026-06047-0

REVIEW Open Access

# Effectiveness and safety of melatoninergic agonists in preventing delirium in the ICU: an updated dose–response meta-analysis of randomized controlled trials

- Meta-analýza RCT
- Melatoninový agonisté (melatonin, ramelteon – schválení jenom FDA) a vliv na delirium na ICU
- 24 RCT – 3680 pacientů

**Table 3** Summary of the results of the primary and secondary outcomes comparing melatoninergic agents (melatonin/ralmeteon) vs. placebo (control group)

| Outcome | | | | | | | | | | | Value | Heterogeneity | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | $I^2$ | p Value |
| Cumulative delirium incidence | | | | | | | | | | | 01 | 57% | 0.002 |
| Cumulative delirium incidence | | | | | | | | | | | 006 | 53% | 0.003 |
| All-cause mortality (28—30 da | | | | | | | | | | | 3 | 0% | 0.82 |
| ICU all-Cause mortality | | | | | | | | | | | 5 | 0% | 0.90 |
| Incidence of significant advers | | | | | | | | | | | 6 | 0% | 0.91 |
| ICU LOS (days) | | | | | | | | | | | 9 | 0% | 1.00 |
| Length of MV (days) | | | | | | | | | | | 4 | 0% | 0.99 |
| Hospital LOS (days) | | | | | | | | | | | 8 | 45% | 0.06 |
| Onset of delirium (days) | | | | | | | | | | | .00001 | 46% | 0.10 |
| Duration of delirium (days) | | | | | | | | | | | 8 | 93% | P < 0.0001 |
| Sleep quality score (a.u) | | | | | | | | | | | 6 | 26% | 0.26 |
| Sleep duration per Night (hou | | | | | | | | | | | 3 | 39% | 0.14 |
| Sleep awakenings per Night (r | | | | | | | | | | | 9 | 55% | 0.05 |
| Cognition at max 3—mo post- | | | | | | | | | | | 1 | 96% | P < 0.0001 |

*NNT for Incidence of Delirium: 1

MCID, Minimally Clinically Impor

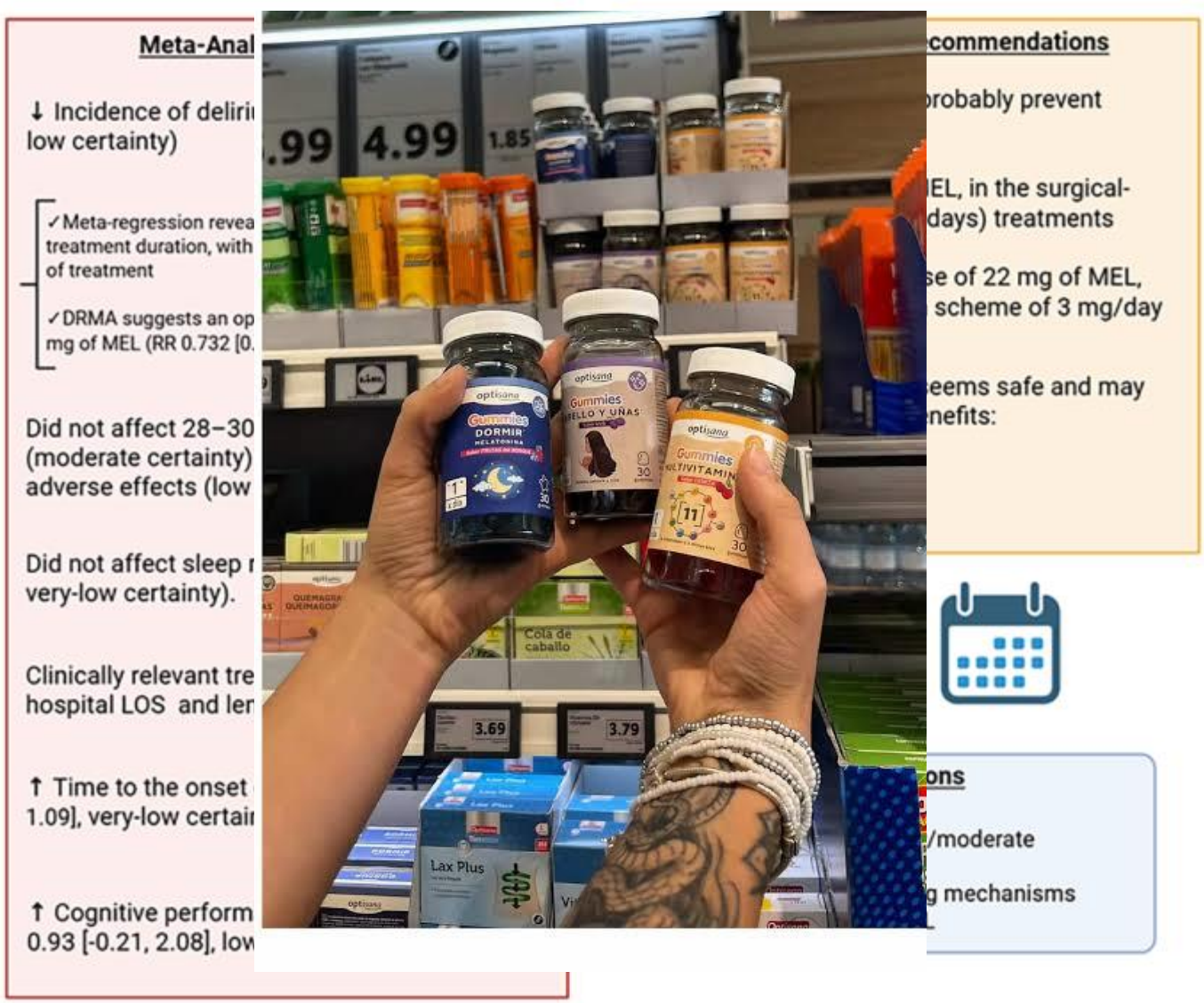
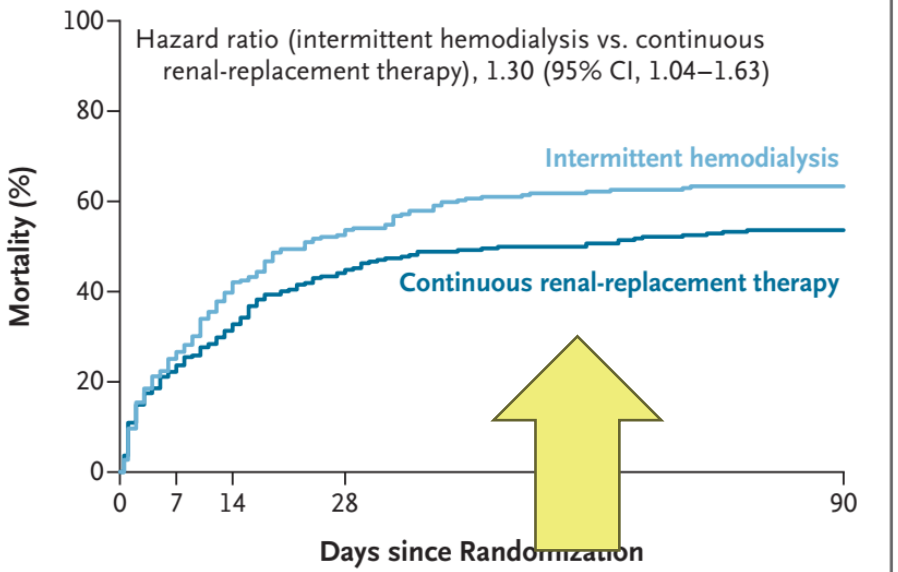


Table 2. Primary and Secondary Outc

| Outcome | ce | Effect Measure (95% CI)† |
|---|---|---|
| | nts | |
| **Primary outcome** | | |
| Major adverse kidney event by day 90 | .79) | 1.09 (0.98 to 1.20) |
| **Secondary outcomes** | | |
| Kaplan–Meier estimate of mortality (9 | | 1.30 (1.04 to 1.63)‡ |
| By day 28 | | — |
| By day 60 | | — |
| By day 90 | | — |
| Dependence on RRT — no. of patient | | |
| At day 60 | 09) | 1.62 (0.57 to 4.59) |
| At day 90 | 13) | 0.92 (0.17 to 5.11) |
| Serum creatinine concentration >25% — no. of patients/total no. | | |
| At day 60 | .66) | 1.12 (0.80 to 1.58) |
| At day 90 | 15.41) | 1.04 (0.73 to 1.50) |
| Median length of stay in ICU (IQR) — | | |
| All patients | | — |
| Patients who were alive at day 90 | | — |
| Patients who had died by day 90 | | — |
| At day 28 | | — |




| No. at Risk | | | | | | |
|---|---|---|---|---|---|---|
| Intermittent hemodialysis | 260 | 194 | 156 | 123 | 97 | 83 |
| Continuous renal-replacement therapy | 275 | 214 | 188 | 153 | 134 | 104 |

**Figure 1.** Kaplan–Meier Curves of the Probability of Death from Randomization to Day 90.

Shown is the cumulative probability of death from randomization through

on the day of randomization).

- M … RT
- IH
- P … ající
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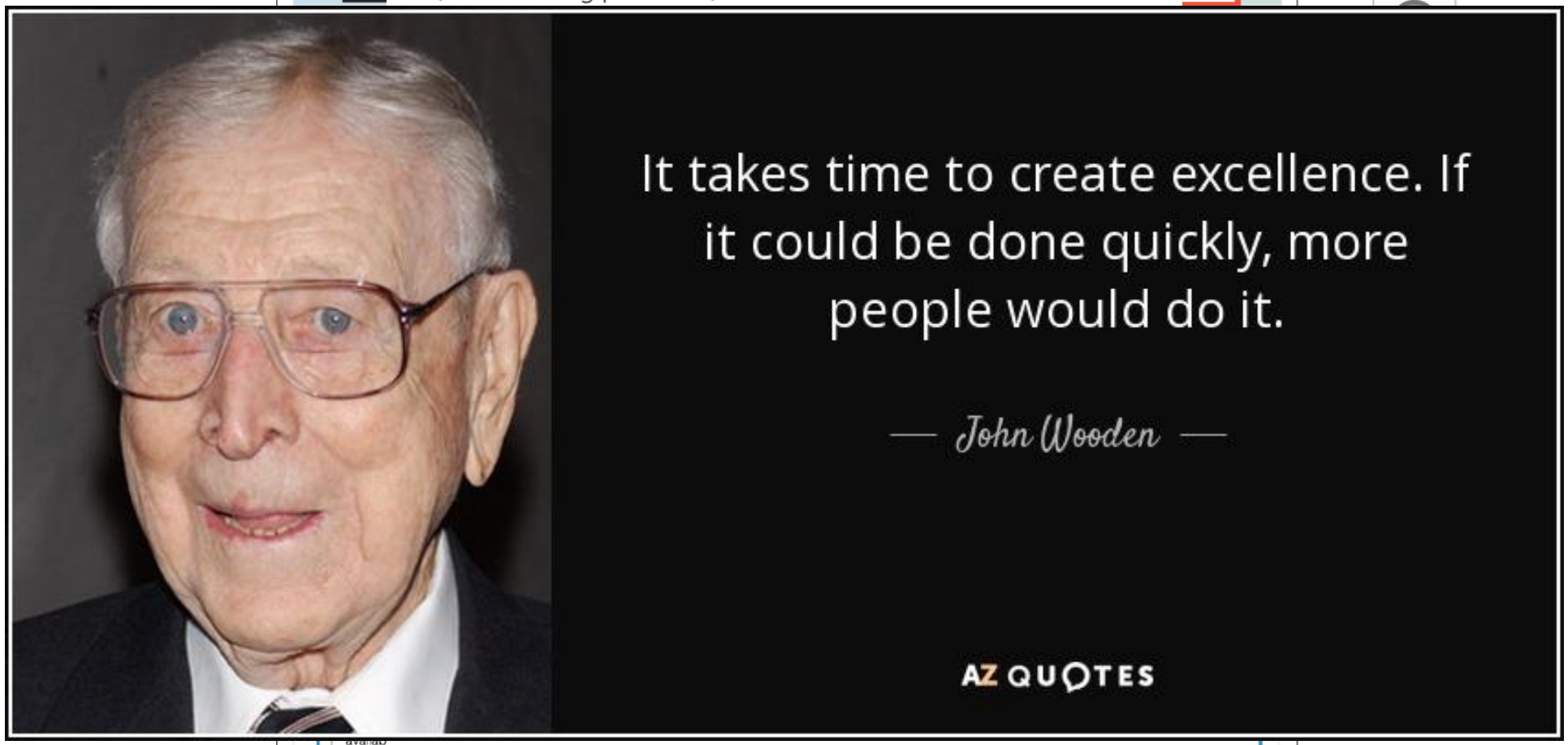
**U kriticky nemocných vyžadujících RRT nebyla IHD non- inferiorní k CRRT.**
**První EBM data preferující CRRT v dané indikaci – tzn. zvážit u každého pacienta IHD/CRRT**

*Intensive Care Med (2*
https://doi.org/10.10

GUIDELIN

**2026 recommendation**

21. For children with septic shock with hypotension being treated in healthcare systems with no intensive care availability, we suggest administering up to 40 mL/kg in bolus fluid (10–20 mL/kg per bolus) over the first hour of initial resuscita-




24. For children with septic shock requiring treatment with fluid boluses, we suggest resuscitation with balanced or buffered crystalloid solutions over 0.9% saline (conditional recommendation, very low certainty of evidence)

# Take home-message

- **Anestezie + OUP** –
- Cílový MAP může být možná více jak 65 mmHg
- HES možná nebude úplně špatný (další výzkum, kde může mít benefit)
- IV vstup CVK jenom pod USG kontrolou, dlouhodobý vstup jenom s USG, obtížný periferní – USG
- Když je možné preferovat kontinuální regionální anestezie
- Management per os příjmu před operací - ERAS atd. – dejte pacientům tekutiny

# Take home-message pokačování

- **ICU –**
- RSI – ketamin? Etomidát možno nebude špatná volba
- Vazopresory + tekutiny inciálně a individualizovaně
- HFNOV individualizovaně (samotná nevede k ↓ mortality)
- VAP – zvaž inhalační ATB

# Take home-message pokačování 2

- Cílová glykémie 6-8 mmol/l
- Na noc melatonin
- Iniciálně zvažuj CRRT před IHD (ale náklady, personál, obtížnost atd – potřeba další studie)
- Dítě není úplně jiný organizmus – máš komplexní doporučení – vstup, laktát, hemokultury, ATB, NRA/adrenalin (historicky) – platí stejné principy s přihlédnutím na patofyziologii

# ání

- EBM je p … maleficence
- Medicína … o na operačním sále, neb…
- Každý de…



# EBM vs. eminence medicine



# Děkuji za pozornost




# Děkuji za spolupráci týmu sekce monitoring článků AKUTNĚ.CZ