FACULTÉ DE MÉDECINE
MONTPELLIER-NÎMES
DEPUIS 1220

AER
ACTUALITÉS EN RÉANIMATION
2025

Que Retenir de l'Actualité en Réanimation?

en Epuration Extra-Rénale

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CHU EMMERUN MONTPELLIER CENTRE HOSPITALIER UNIVERSITAIRE

UNIVERSITÉ MONTPELLIER

.1 Timing EER

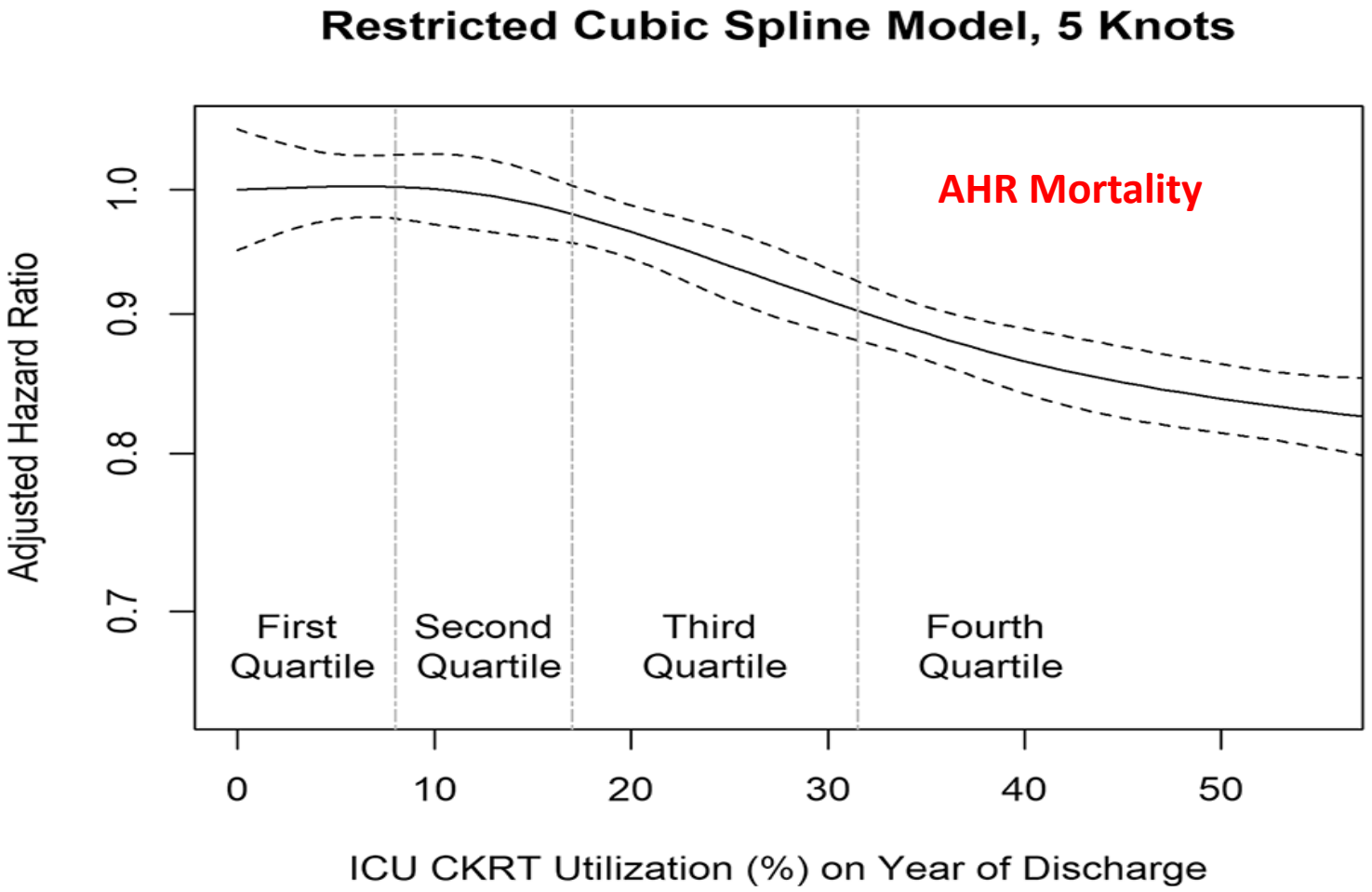
.2 Tolérance Hémodynamique Intra Dialytique, Ultrafiltration

.3 Dose de Dialyse Aiguë

.4 Sevrage de l’EER et Devenir Ultérieur de la Fonction Rénale

Association of hospital-level continuous kidney replacement therapy use and mortality in critically ill patients with AKI

Neyra J et al. Intensive Care Med (2025) 51:1271–1281



49,685 AKI, 426 U.S. hospitals, KRT in ICU

higher CKRT utilization (CKRT in ≥ 31.5% of KRT pts/y)
15% lower adjusted probability of death
Vs lower CKRT utilization rates (CKRT in < 8% of KRT/y)

Third: [aHR], 0.93,95%CI: 0.89–0.98)
Fourth (aHR, 0.85, 95%CI: 0.81–0.89) quartiles
associated with lower risk-adjusted hospital mortality.

Higher hospital-level CKRT utilization rate associated with lower patient-level risk-adjusted hospital mortality.

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Renal replacement therapy in an intensive care unit: guidelines from the SRLF-GFRUP. consensus conference

Jourdain *et al. Annals of Intensive Care (2025) 15:100*

Initier EER en cas:

hyperkaliémie > 6.5 mmol/L
OAP avec hypoxémie (modérée à sévère) réfractaire
Urée plasmatique > 40 mmol/L
Pas avant 72H si IRA KDIGO3

Acidose métabolique isolée non suffisante

(Grade 1-/ High quality of evidence/Strong agreement).

Research

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Sodium Bicarbonate for Severe Metabolic Acidemia and Acute Kidney Injury

The BICARICU-2 Randomized Clinical Trial

Boris Jung, MD, PhD; Mathieu Jabaudon, MD, PhD; Audrey De Jong, MD, PhD; Laurent Bitker, MD, PhD; Jules Audard, MD, PhD; Kada Klouche, MD, PhD; Benjamine Sarton, MD, PhD; Christophe Guitton, MD, PhD; Sigismond Lasocki, MD, PhD; Benjamin Rieu, MD, PhD; Emmanuel Canet, MD, PhD; Caroline Jeantrelle, MD; Antoine Roquilly, MD, PhD; Julien Mayaux, MD, PhD; Franck Verdonk, MD, PhD; Julien Pottecher, MD, PhD; Martine Ferrandiere, MD; Beatrice Riu, MD; Pierre Garcon, MD; Mona Assefi, MD; Philippe Detouche, MD; Jean Marie Forel, MD, PhD; Claire Roger, MD, PhD; Jeremy Bourenne, MD; Sophie Jacquier, MD; David Bougon, MD; Amelie Rolle, MD, PhD; Philippe Corne, MD, PhD; Nacim Benchabane, MD; Jean Christophe Richard, MD, PhD; Karim Asehnoune, MD, PhD; Gerald Chanques, MD, PhD; Jean Reignier, MD, PhD; Foud Belafia, MD; Maxime Fosset, MD; Helena Huguet, MSc; Emmanuel Futier, MD, PhD; Nicolas Molinari, PhD; Samir Jaber, MD, PhD; for the BICARICU-2 Study Group

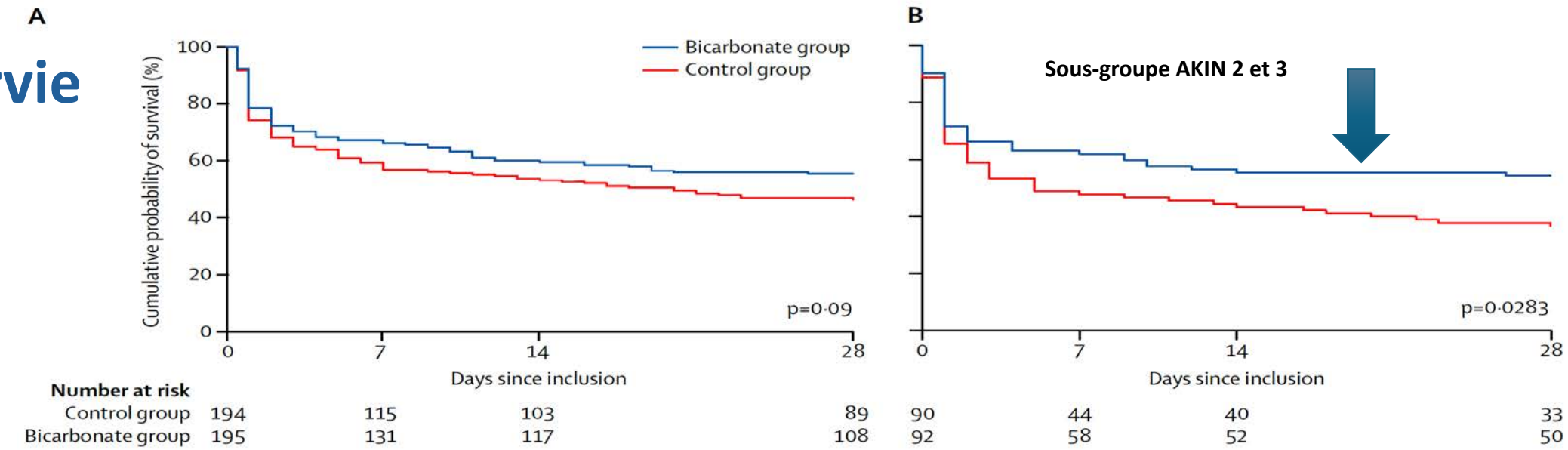
JAMA. doi:10.1001/jama.2025.20231
Published online October 29, 2025.

Rappel **Bicar-ICU** 1 :

réduction mortalité avec bicarbonate uniquement dans le sous-groupe avec IRA (score AKIN 2-3)

réduction du nombre de EER de 16% dans le bras bicarbonate

Survie



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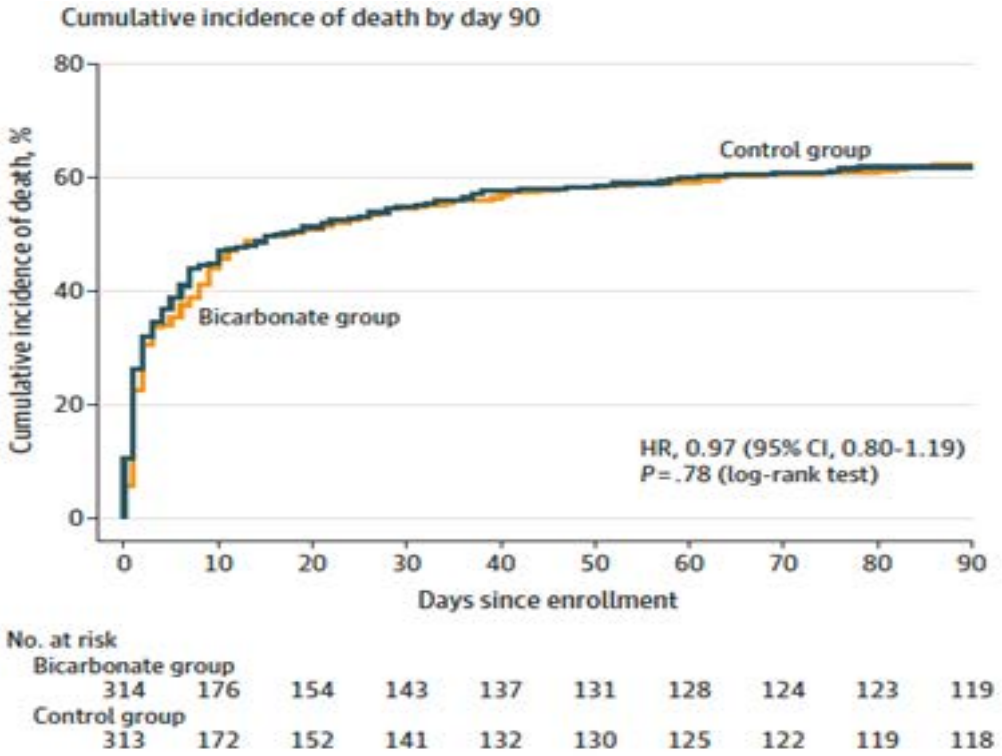
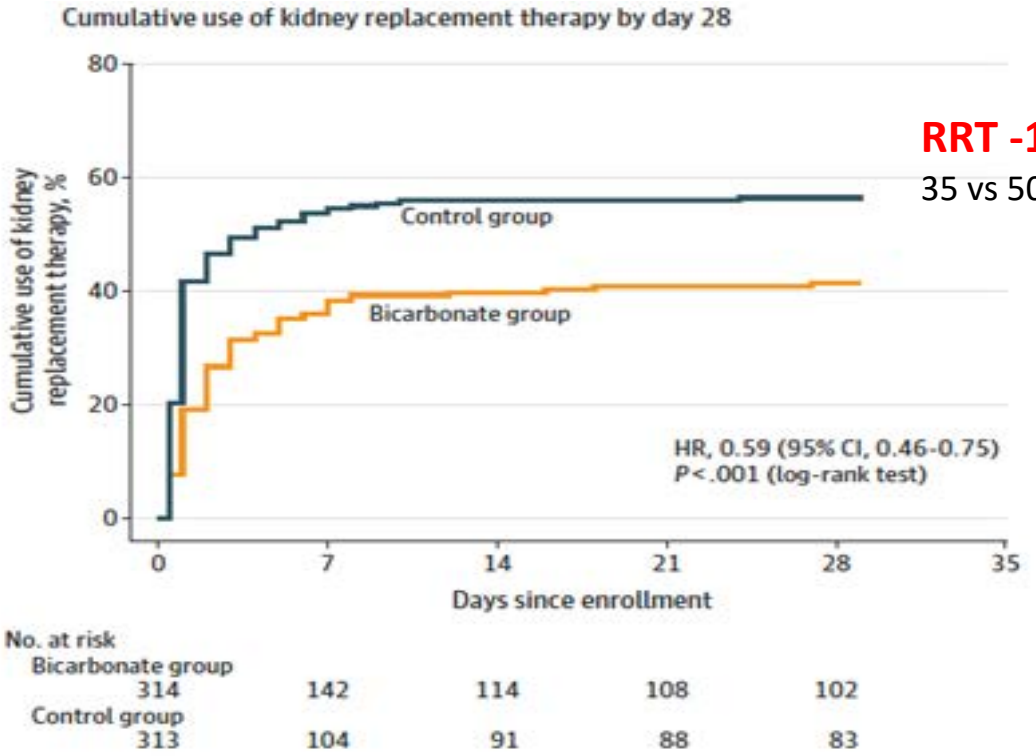
627 IRA KDIGO 2 ou 3 , SOFA ≥4 et lactate ≥2mmol/L
pH ≤ 7.20, bicarbonate ≤ 20mmol/L et pCO2 ≤45mmHg
Intervention: Bicarbonate 4,2% IV 125-250ml sur 30 min →pH ≥ 7.30 (max 1l/24h)





RRT -15%
35 vs 50%

A, Death was observed after 18 days (95% CI, 2-90 days) in the sodium bicarbonate group and 16 days (95% CI, 1-90 days) in the control group. B, Kidney replacement therapy was initiated 4.5 days (95% CI, 1-29 days) after enrollment for the bicarbonate group and 1 day (95% CI, 0.5-29 days) after enrollment for the control group. HR indicates hazard ratio.

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Sodium Bicarbonate for Severe Metabolic Acidemia and Acute Kidney Injury

The BICARICU-2 Randomized Clinical Trial

JAMA. doi:10.1001/jama.2025.20231
Published online October 29, 2025.

En cas d'IRA (KDIGO 2 ou 3) avec acidose métabolique (pH ≤ 7.20, bic ≤ 20mmol/L)

Bicarbonate 4,2% IV ne reduit pas la mortalité.

… mais reduit le recours à l'EER de 15%

et permet de differer son initiation de 15h.

Time to Renal Replacement Therapy Initiation in Critically Ill Patients With AKI:

A Secondary Analysis of the Standard Versus Accelerated Initiation of Renal Replacement Therapy in AKI (STARRT-AKI) Trial

Jeong R et al. Crit Care Med 2025 Apr 1;53(4):e897-e907.

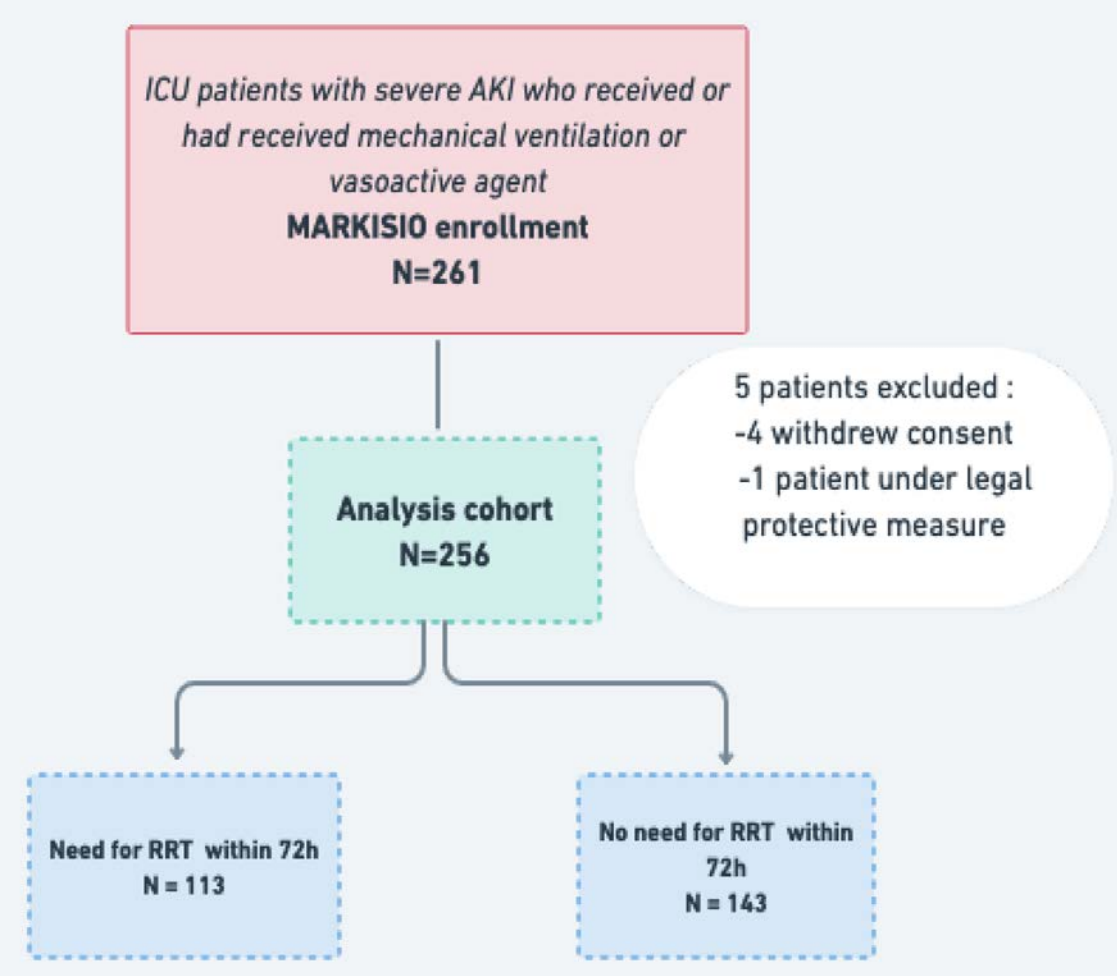
A post hoc secondary analysis of multinational STARRT-AKI trial.
Of the 1462 participants allocated to the standard strategy group, 903 (62%) received RRT.
Time to RRT initiation:
12.1 H (8.3-13.8), 24.5 H (21.8-26.5 H), 46.8 H (35.2-52.1 hr), and 96.1 H (76.7-139.2 hr)

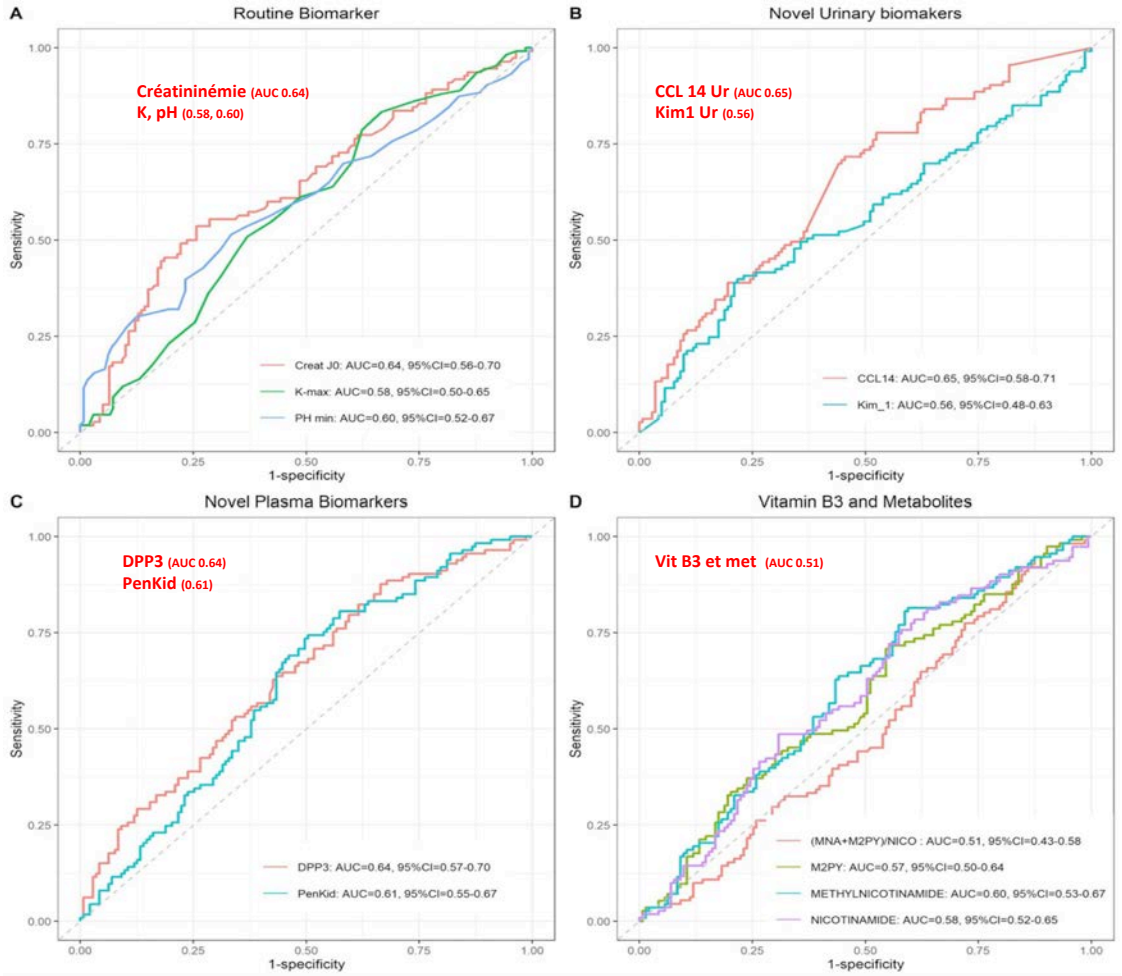
Prolonged time to RRT initiation:
lower risk of death at 90 D (quartile 4 vs. 1: adjusted odds ratio, 0.63 [95% CI, 0.42-0.94]);
further analyses using cubic splines and inverse probability weighting to account for immortal time bias showed **no association with the risk of death.**
No association between time to RRT initiation and RRT-free days, hospital-free days, or lengths of ICU or hospital stay.
Longer delay to RRT initiation had a linear association with RRT dependence at 90 days.

Conclusions: Among patients with no urgent indications and who received RRT in the standard strategy of the STARRT-AKI trial, **longer deferral of RRT initiation was not associated with a higher risk of mortality**

Biomarkers in acute kidney injury settings to predict interventions and outcomes: the MARKISIO study

Chaïbi et al. Critical Care (2025) 29:204





Neither routine nor novel biomarkers demonstrated conclusive predictive accuracy for the need for RRTin severe AKI.
Given evidence-based criteria for initiating RRT, the tested biomarkers may not effectively guide RRT initiation.

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Jourdain *et al. Annals of Intensive Care (2025) 15:100*

Hémodynamique stable

Pas de preference d'une technique par rapport à l'autre

Choix basé sur équipement, expertise

Panel opinion/Low/Strong agreement).

Instabilité Hémodynamique

Augmenter [Na]dialysat

Baisser la temp. Dialysat (-1.5 °C to -2 °C patient)

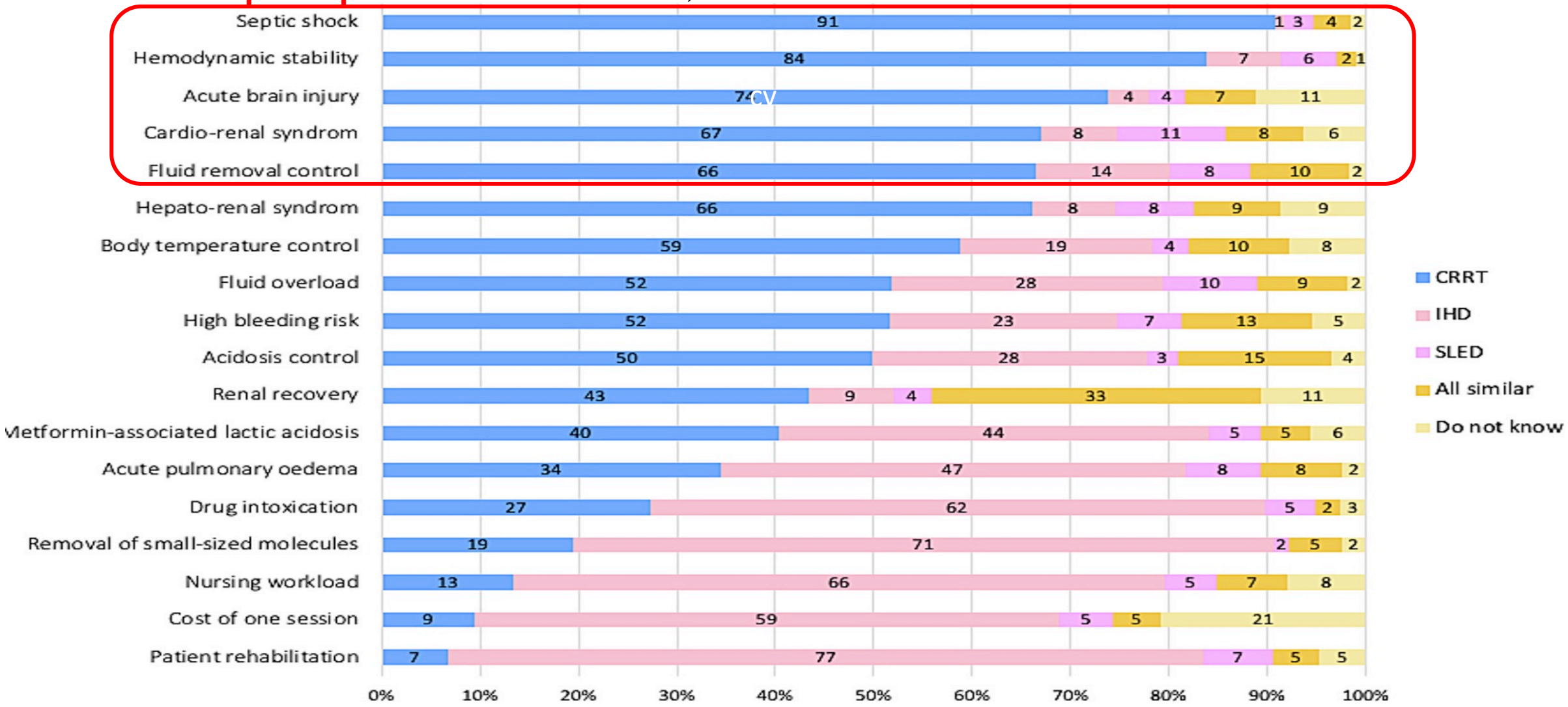
Evaluer volémie, **pas/stopper UF si hypovolémie**

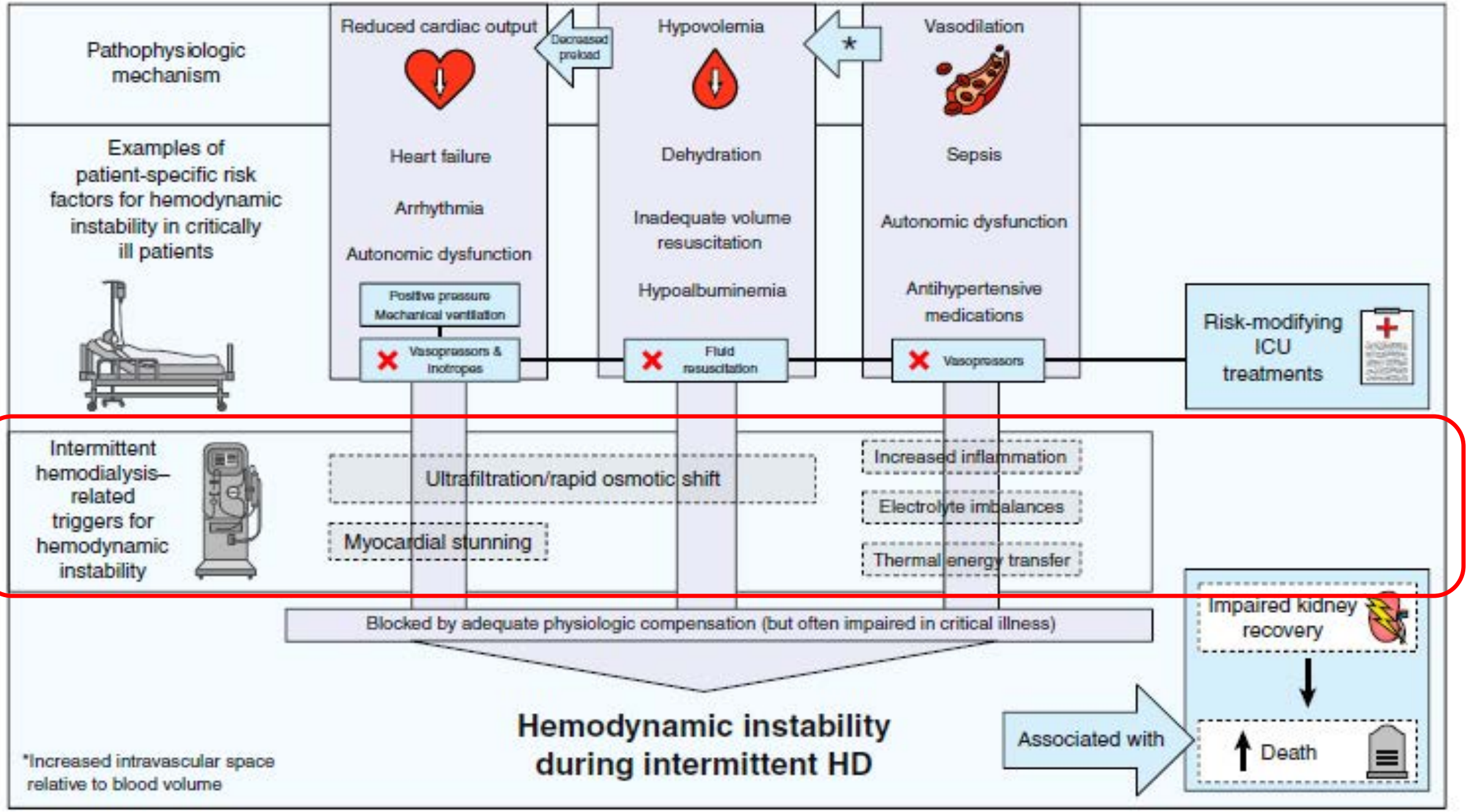
(GRADE 2 + /Moderate quality of evidence/Strong agreement).

RRT modalities and techniques in intensive care units: An international survey

Monard C et al. On behalf of the ESICM AKI section J Crit Care 88 (2025) 155076

1174 participants from 73 countries,




Pathophysiologic mechanism
Reduced cardiac output
Decreased preload
Hypovolemia
*
Vasodilation
Examples of patient-specific risk factors for hemodynamic instability in critically ill patients
Heart failure
Arrhythmia
Autonomic dysfunction
Dehydration
Inadequate volume resuscitation
Hypoalbuminemia
Sepsis
Autonomic dysfunction
Antihypertensive medications
Positive pressure Mechanical ventilation
Vasopressors & Inotropes
Fluid resuscitation
Vasopressors
Risk-modifying ICU treatments
Intermittent hemodialysis–related triggers for hemodynamic instability
Ultrafiltration/rapid osmotic shift
Myocardial stunning
Increased inflammation
Electrolyte imbalances
Thermal energy transfer
Blocked by adequate physiologic compensation (but often impaired in critical illness)
Hemodynamic instability during intermittent HD
Associated with
Impaired kidney recovery
Death
*Increased intravascular space relative to blood volume

Determinants of Urine Output Using Advanced Hemodynamic Monitoring in Critically Ill Patients Undergoing Continuous Renal Replacement Therapy.

Bitker L, et al. Blood Purif. 2024;53(3):189-199.

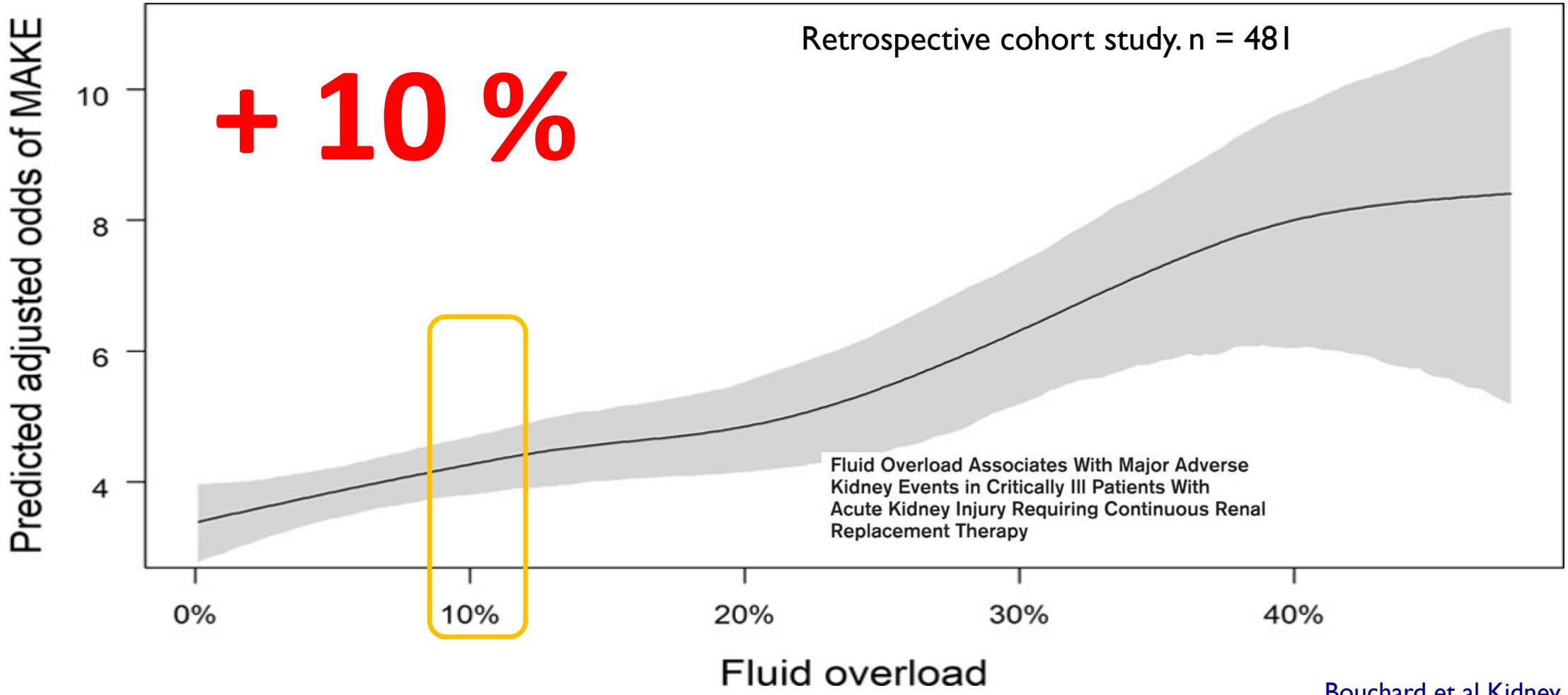
Analyse ancillaire etude Obsv. Monocentr PRELOAD

78 % d'anuries dans les 50 heures après EER (42 % non anuriques avant EER)

Facteurs indépendants d'anurie per EER

- lower SVI
- lower MAP
- preload-dependence
- **higher UF_{NET}**

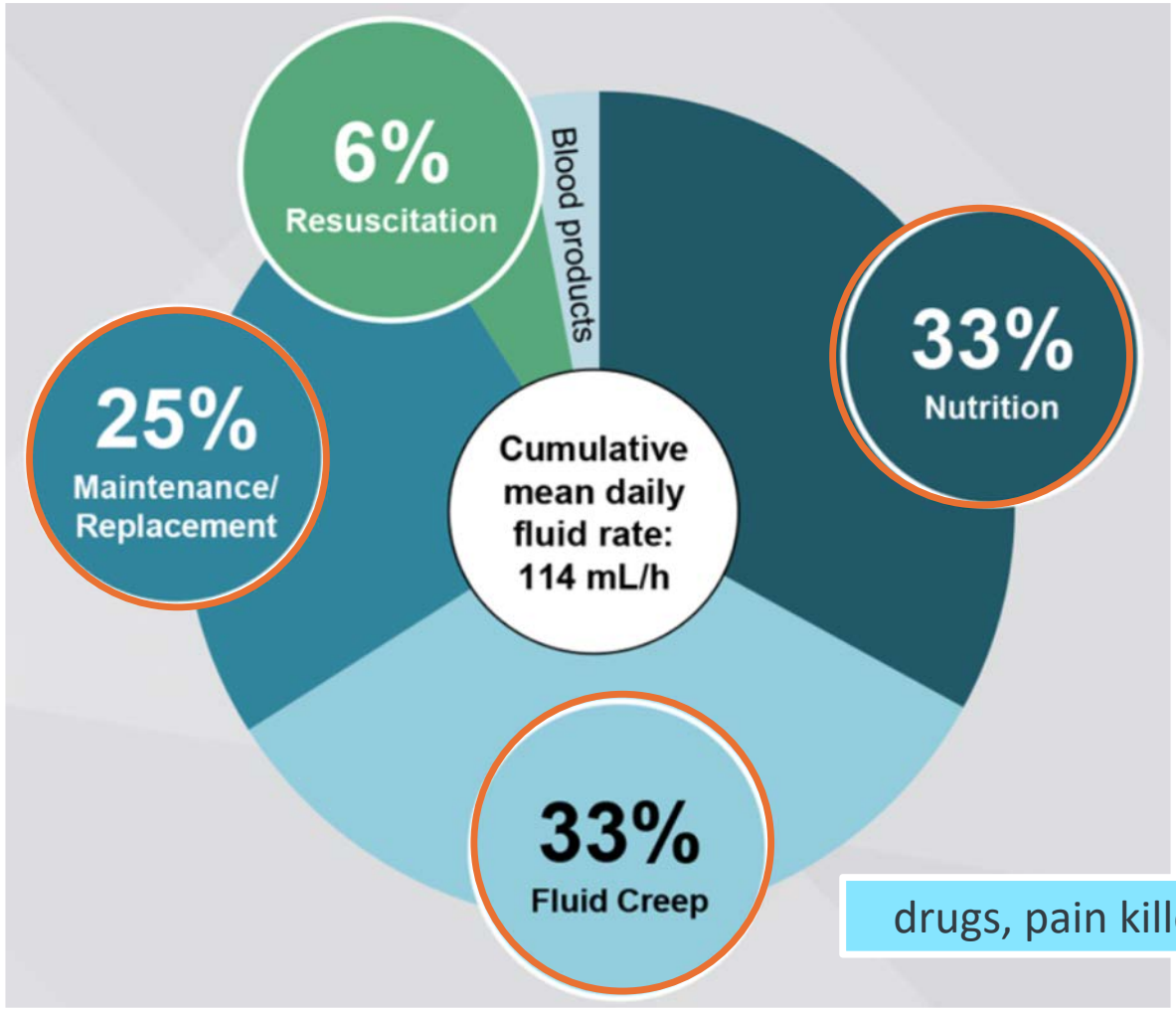
Balance hydro sodée, mortalité et risque de complication rénale – MAKE 90



Bouchard et al Kidney Int 2009
Woodward et al Crit Care Med 2019

Solutés de remplissage vasculaire:

le problème : remplissage ou apports occultes de fluides ?



drugs, pain killers, antibiotics,

Van Regenmortel – Intensive Care Med 2018

*C*ontrôle de la balance hydrosodée et épuration extra rénale

… des risques bien réels

- Low cerebral blood flow
- White matter changes
- Dementia
- Depression
- Cognitive decline

- Kidney failure
- Dialysis dependence

- Kidney ischemia
- Loss of residual Kidney function

High Ultrafiltration rate

- Myocardial ischemia
- Wall motion abnormality
- Arrythmias

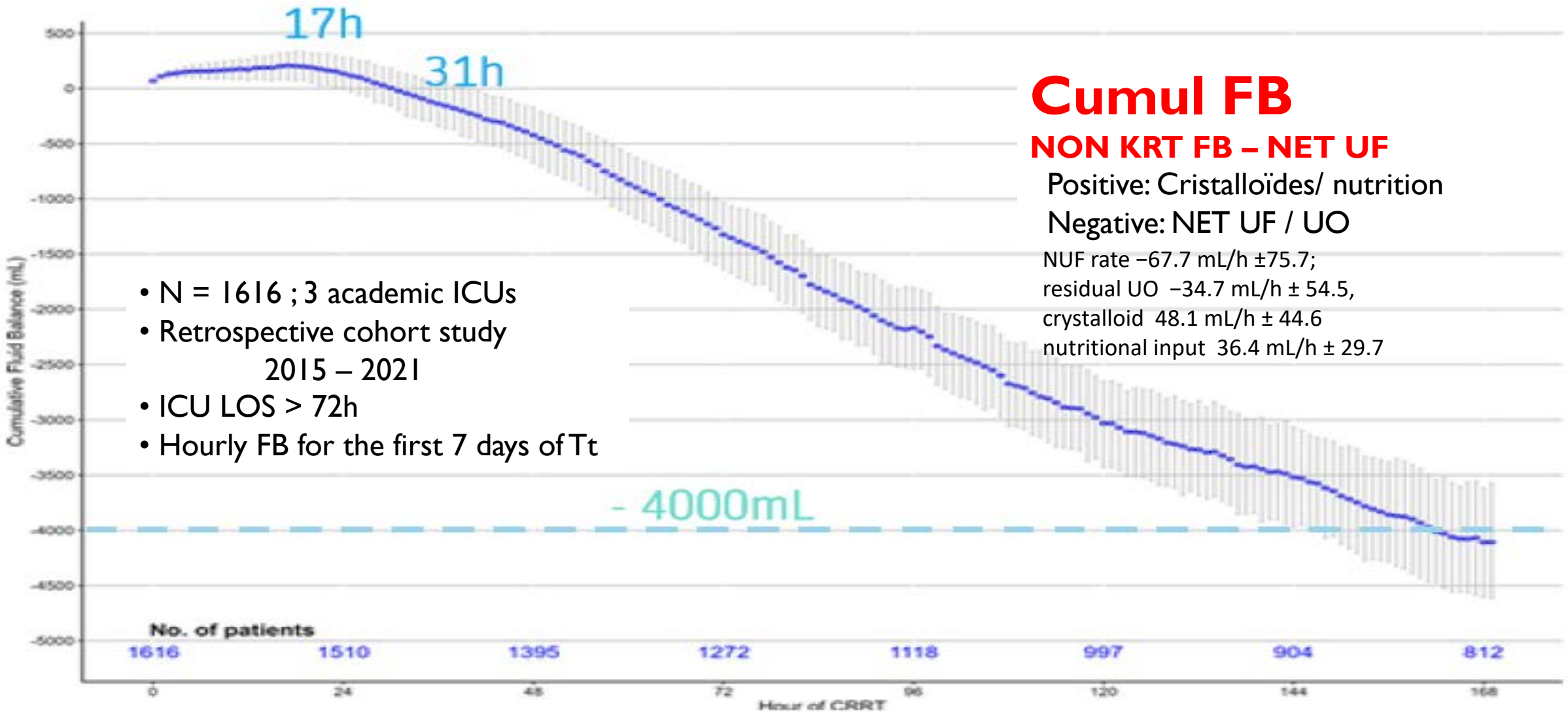
- Heart failure
- Death

- Gut ischemia
- Endotoxin translocation
- SIRS
- Sepsis

Murugan et al Nature Review Nephrol 2021

Current Fluid Management Practice in Critically Ill Adults on Continuous Renal Replacement Therapy: A Binational, Observational Study.

White KC, et al. Blood Purif. 2024;53(8):624-633.



- N = 1616 ; 3 academic ICUs
- Retrospective cohort study
  2015 – 2021
- ICU LOS > 72h
- Hourly FB for the first 7 days of Tt

Cumul FB

NON KRT FB – NET UF

Positive: Cristalloïdes/ nutrition

Negative: NET UF / UO

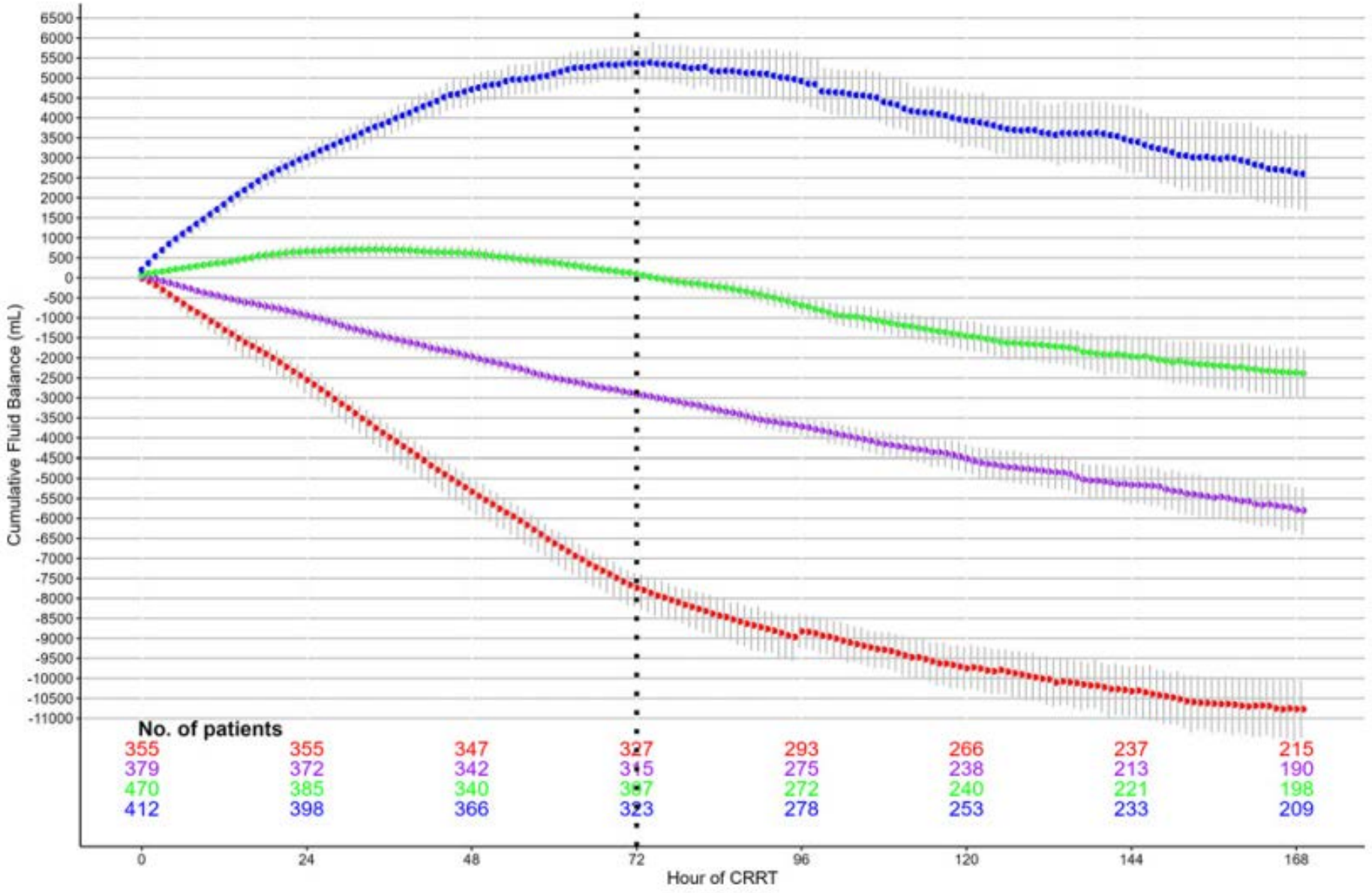
NUF rate −67.7 mL/h ±75.7;
residual UO −34.7 mL/h ± 54.5,
crystalloid 48.1 mL/h ± 44.6
nutritional input 36.4 mL/h ± 29.7

Balance Hydro-sodée, Profils

FB + After 72H OF CRRT
- More ill,
- High Vasop,
- High Lactate

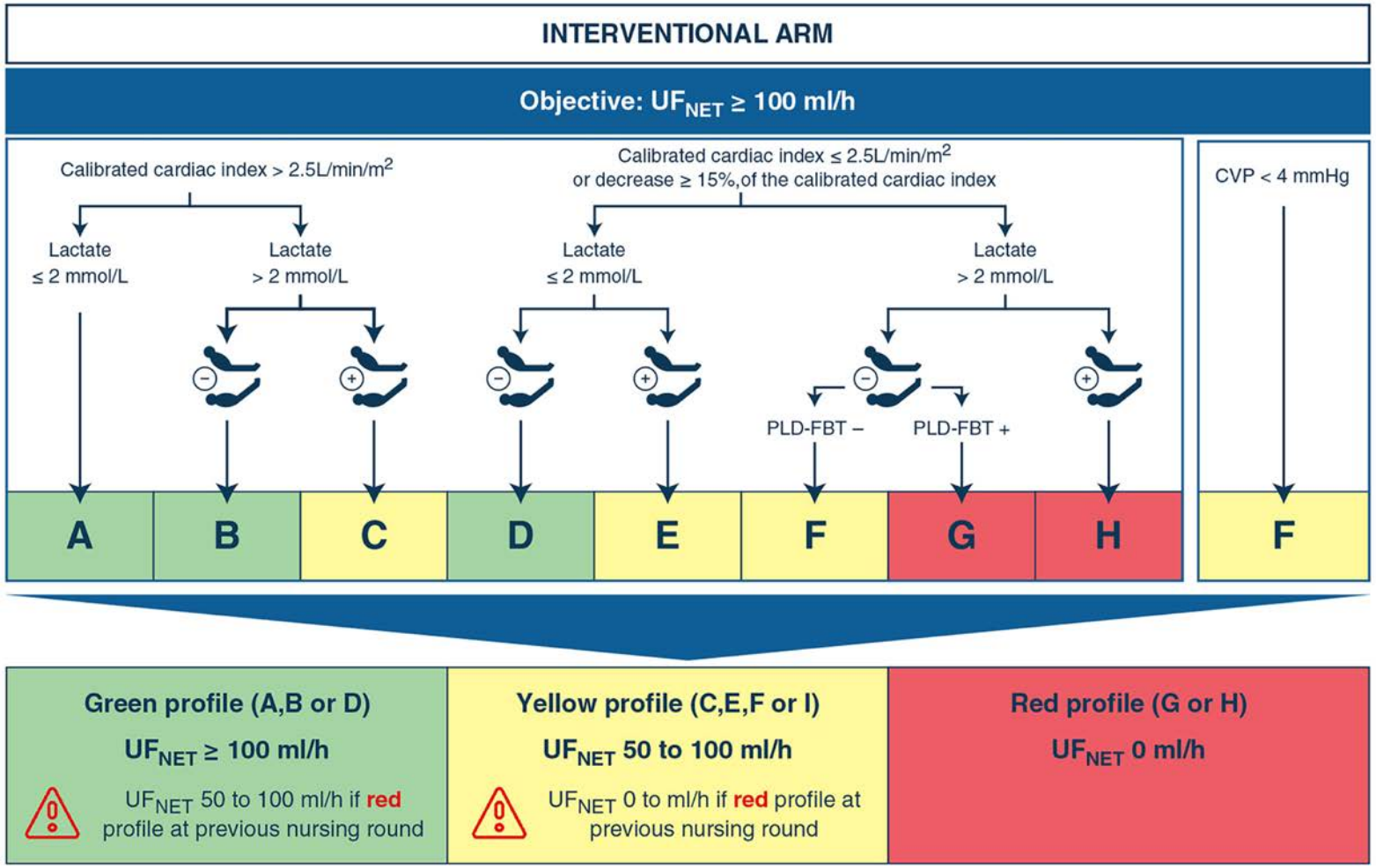
(5.0 mmol/l; IQR: 2.3–10.5).

A Positive FB
Independently ass.
Increased Hospital mortality
(OR: 1.70; 95% CI; P=0.004).



Contrôle de la balance hydrosodée par l'EER au cours des états de choc

… avec monitorage hémodynamique : The GO NEUTRAL Trial



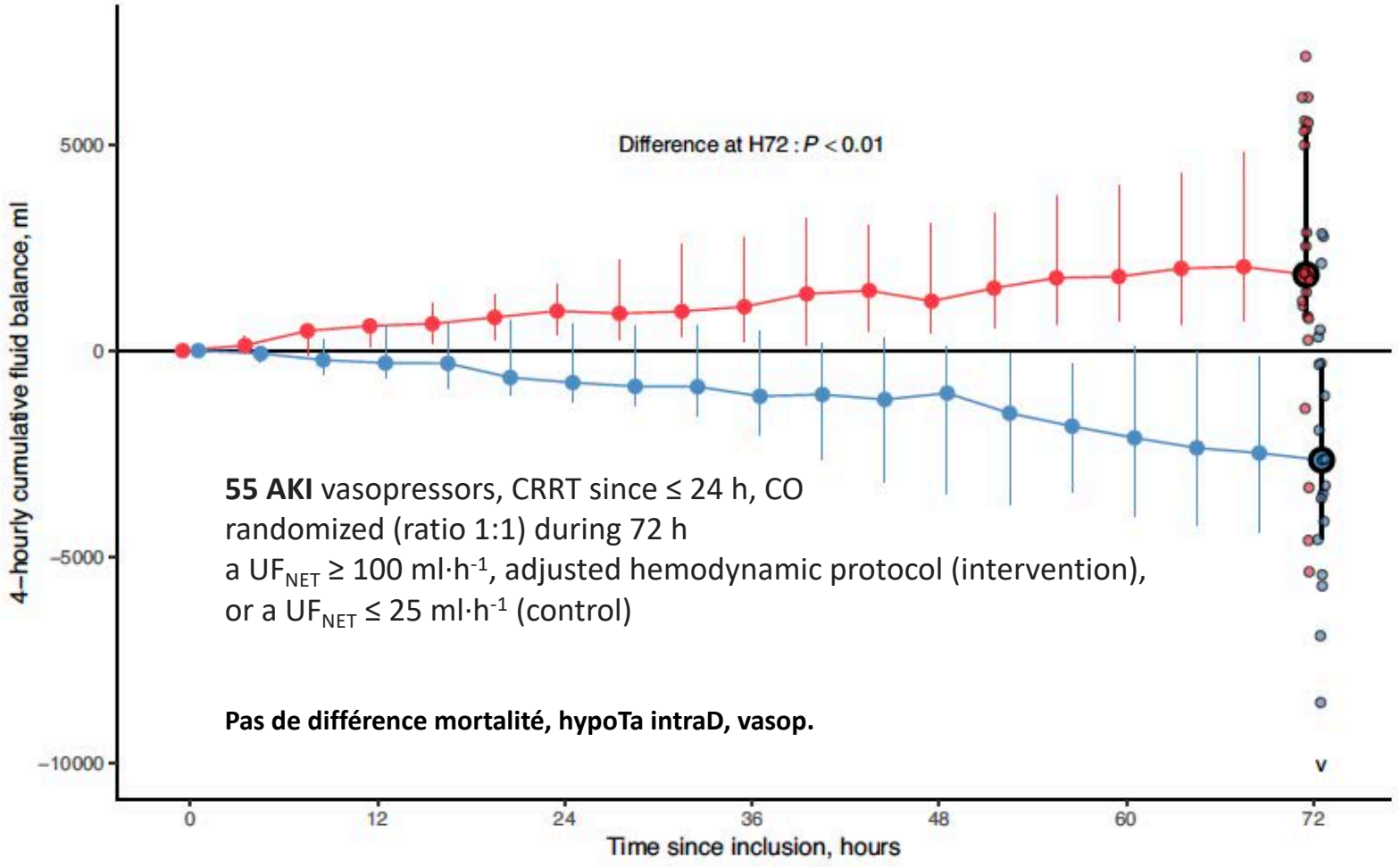
PLD-FBT preload dependence evaluated by a fluid bolus challenge

Fluid balance neutralization secured by hemodynamic monitoring versus protocolized standard of care in patients with acute circulatory failure requiring continuous renal replacement therapy: results of the GO NEUTRAL randomized controlled trial

Bitker L, et al.
Intensive Care Med. 2024 Dec;50(12):2061-2072.

Contrôle de la balance hydrosodée au cours des états de choc

… avec monitorage hémodynamique : The GO NEUTRAL Trial



55 AKI vasopressors, CRRT since ≤ 24 h, CO
randomized (ratio 1:1) during 72 h
a UF_{NET} ≥ 100 ml·h^{-1}, adjusted hemodynamic protocol (intervention),
or a UF_{NET} ≤ 25 ml·h^{-1} (control)

Pas de différence mortalité, hypoTa intraD, vasop.

Conclusion:
In patients with vasopressors, a UFNET
fluid removal strategy secured by a hemodynamic
protocol allowed active fluid balance control,
compared to the standard of care.

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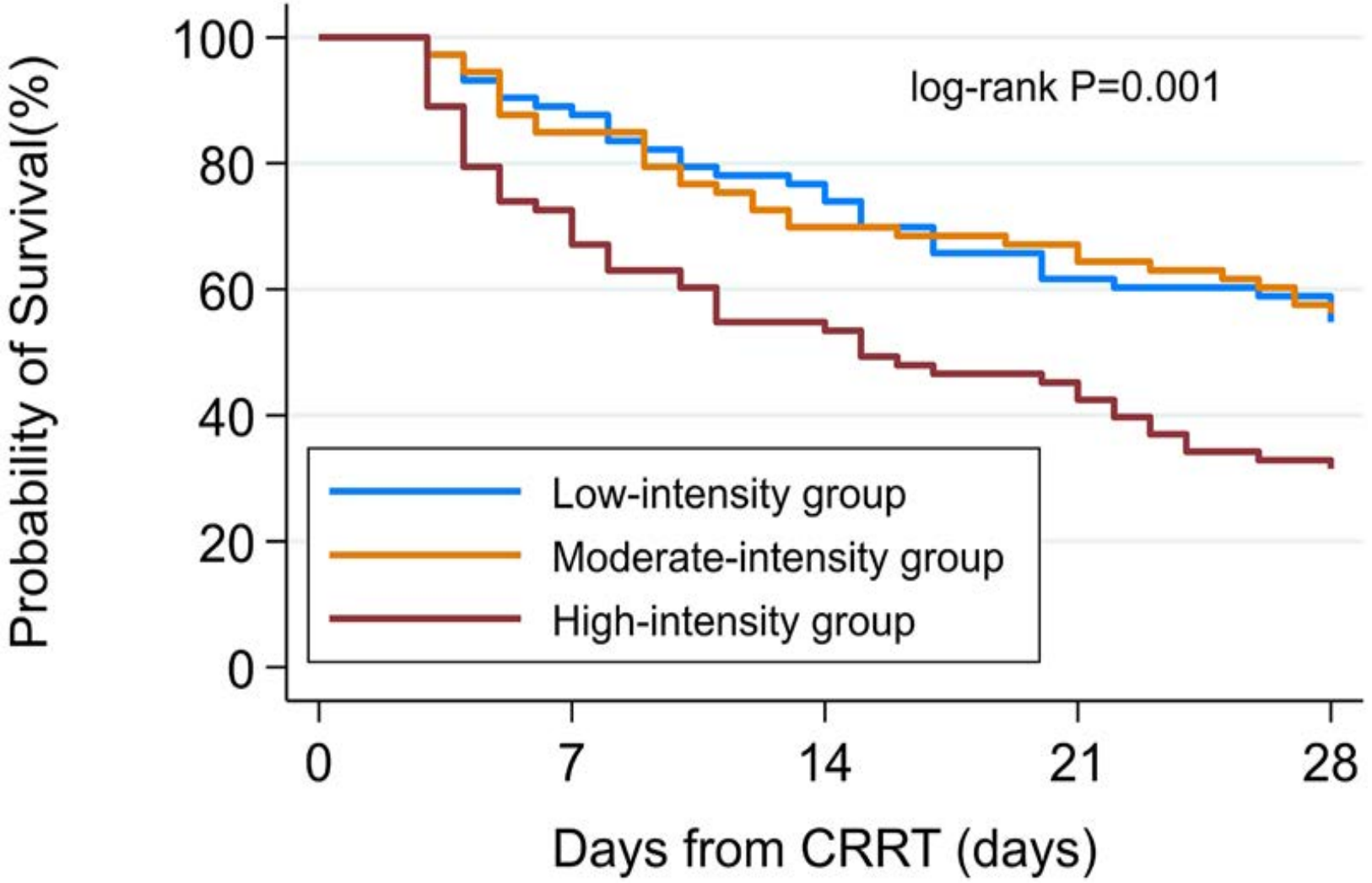
Bitker et al Intensive Care Med 2024

Early net ultrafiltration thresholds and mortality in critically ill patients with septic acute kidney injury receiving continuous renal replacement therapy

Zhao CL et al. Renal Failure 2025,VOL. 47, NO. 1, 2511277

Retrospective cohort of 219 septic AKI CRRT



Early NUF

(weight-adjusted fluid removal/hour during the first 48 h of CRRT)
low- (<1.22 mL/kg/h),
moderate- (1.22–1.79 mL/kg/h),
high-intensity (>1.79 mL/ kg/h)

High-intensity highest 28-day mortality (68.5% vs. 43.8% moderate vs. 45.2% low).

Early net ultrafiltration thresholds and mortality in critically ill patients with septic acute kidney injury receiving continuous renal replacement therapy

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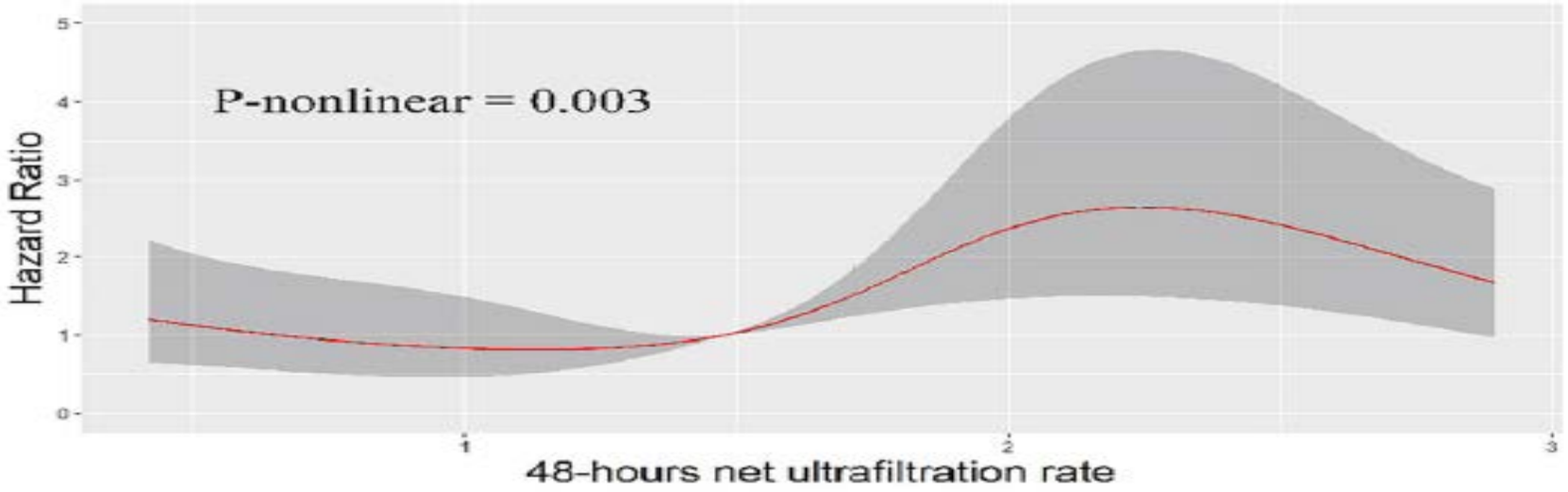
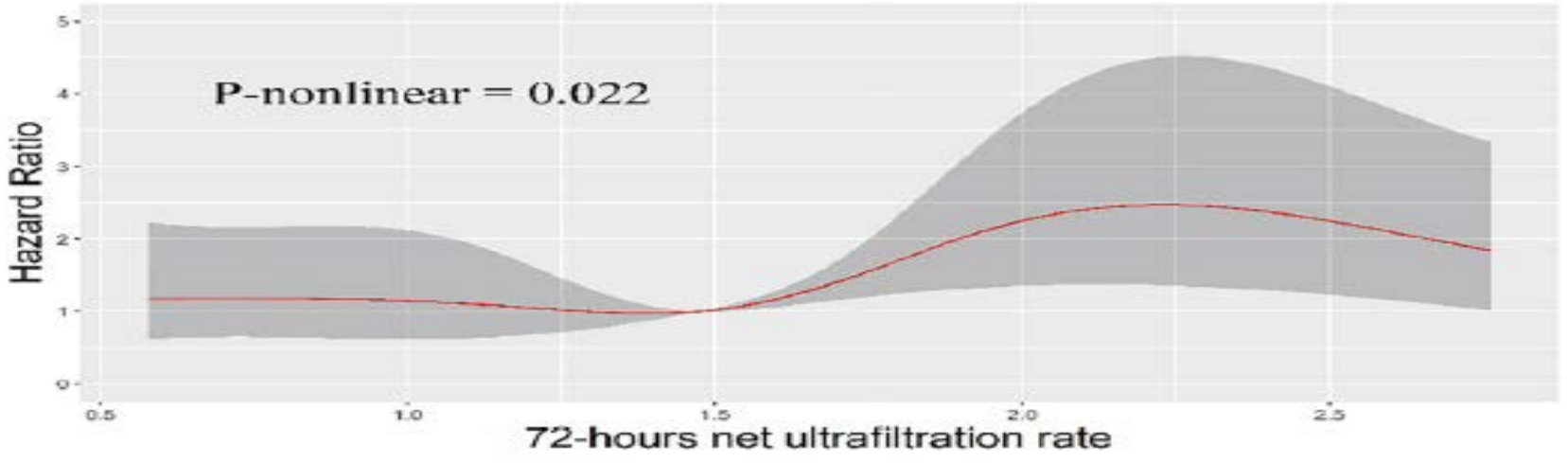
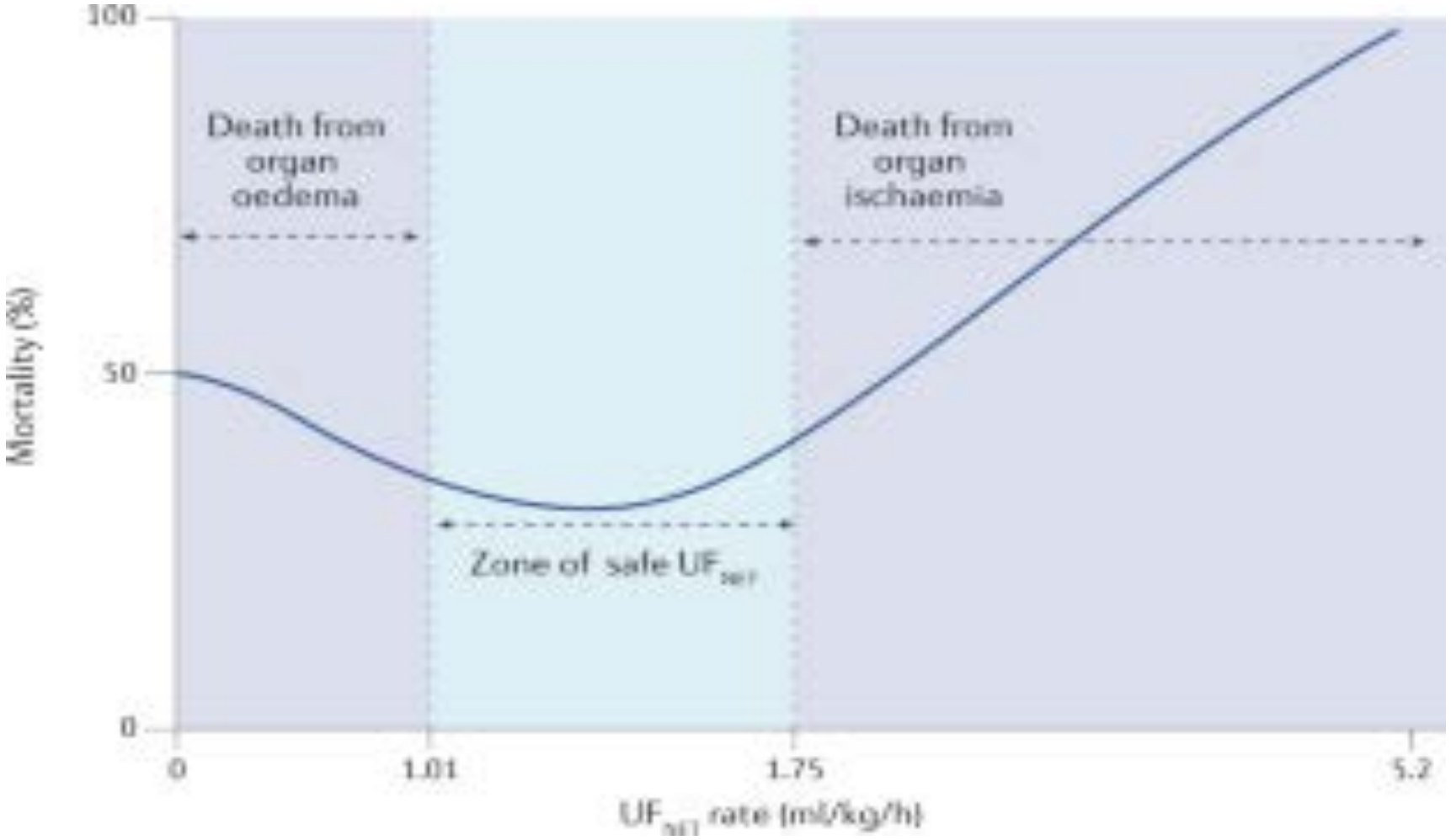


Restricted cubic spline analysis revealed a J-shaped mortality pattern, showing **escalating risks above 1.79 mL/kg/h and an optimal survival window of 1.22–1.79 mL/kg/h.**

Mortality



*C*ontrôle de la balance hydrosodée et épuration extra rénale : conclusion



- 10 % d'inflation
- + 4000 ml
- Monitorage hémodynamique étroit
- Surtout si **UF > 1.75 ml/Kg/h**
- Soit 70 – 120 ml/h pour 70 Kg

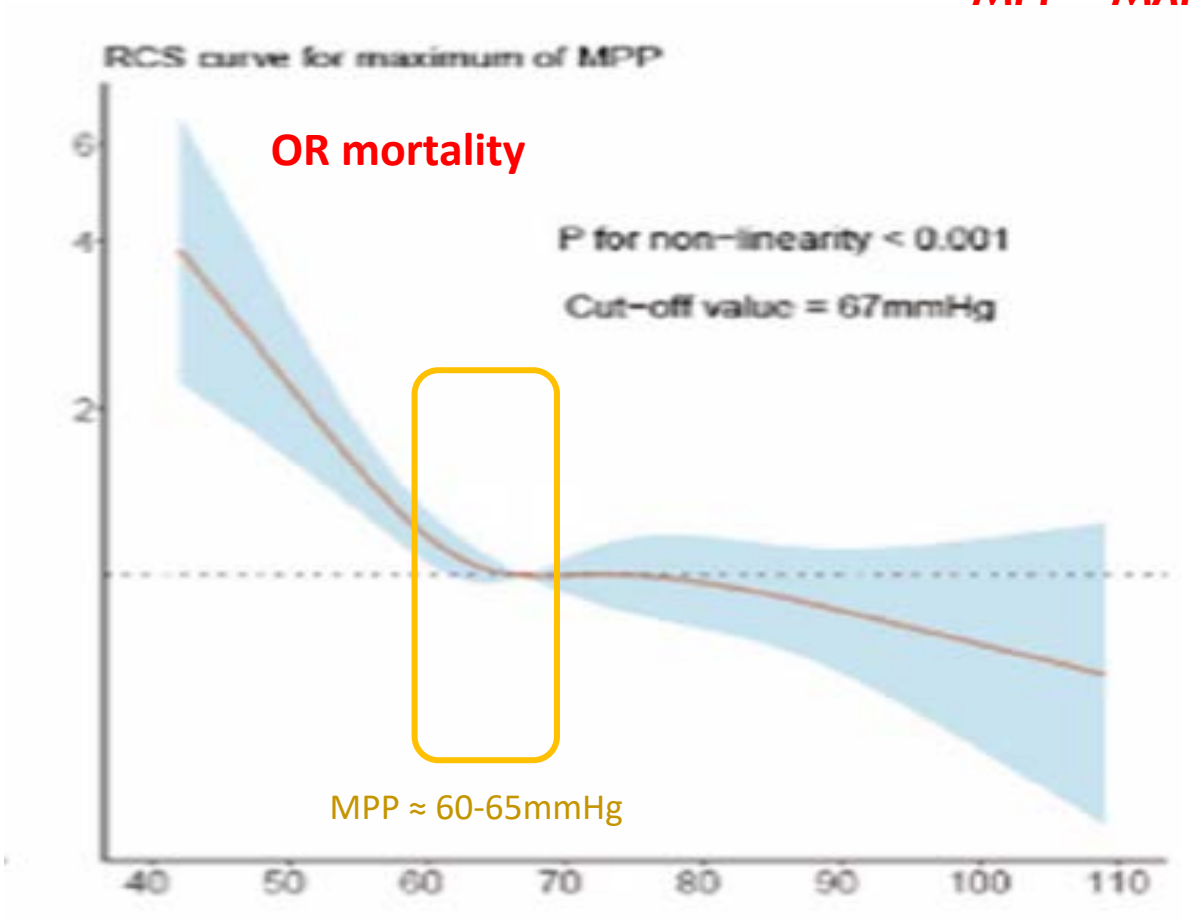
Murugan et al Nature Review Nephrol 2021

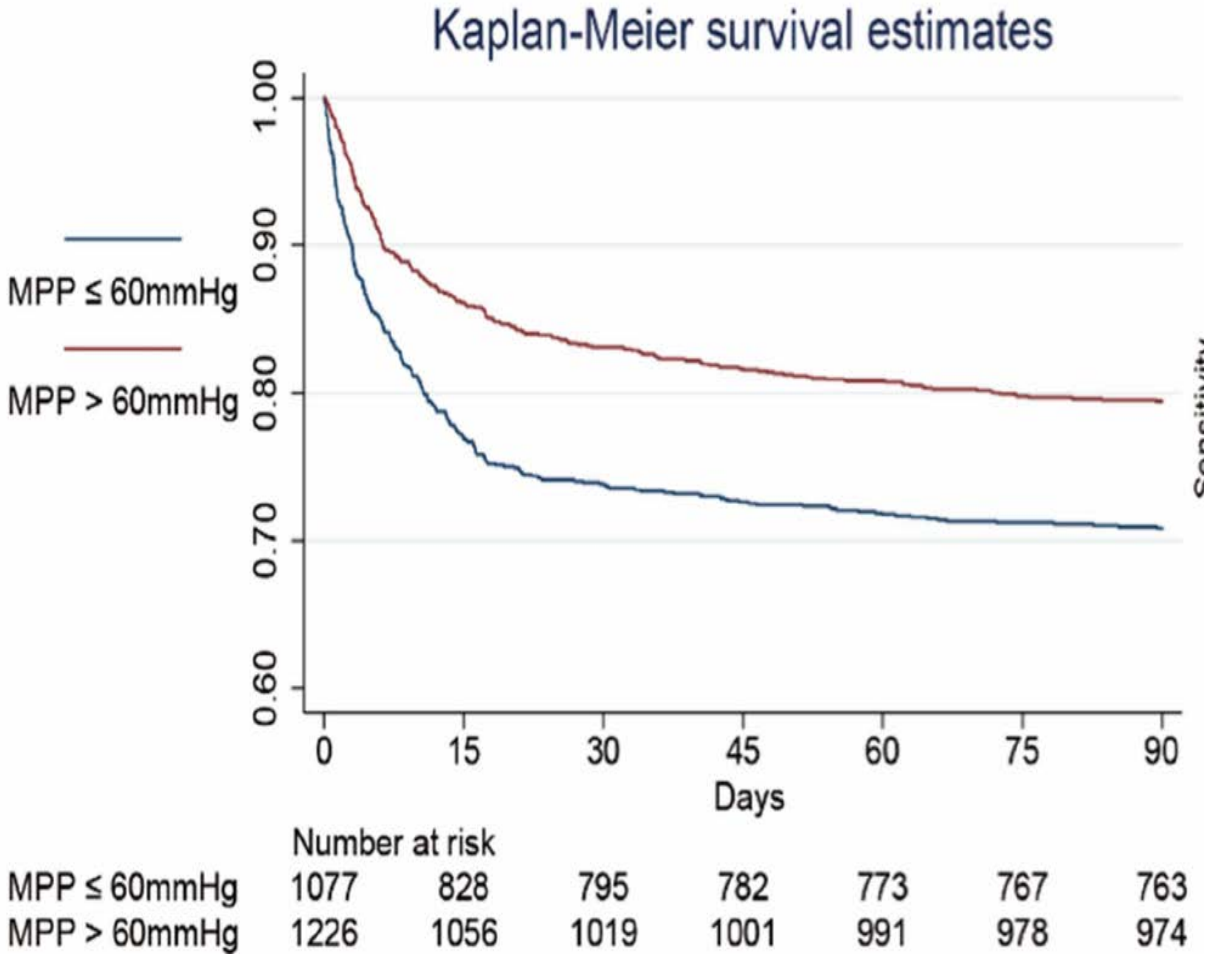
Association between renal mean perfusion pressure and prognosis in patients with sepsis-associated acute kidney injury: insights from the MIMIC IV database

Fang Y et al. Renal Failure, 2025; 47:1; 2449579

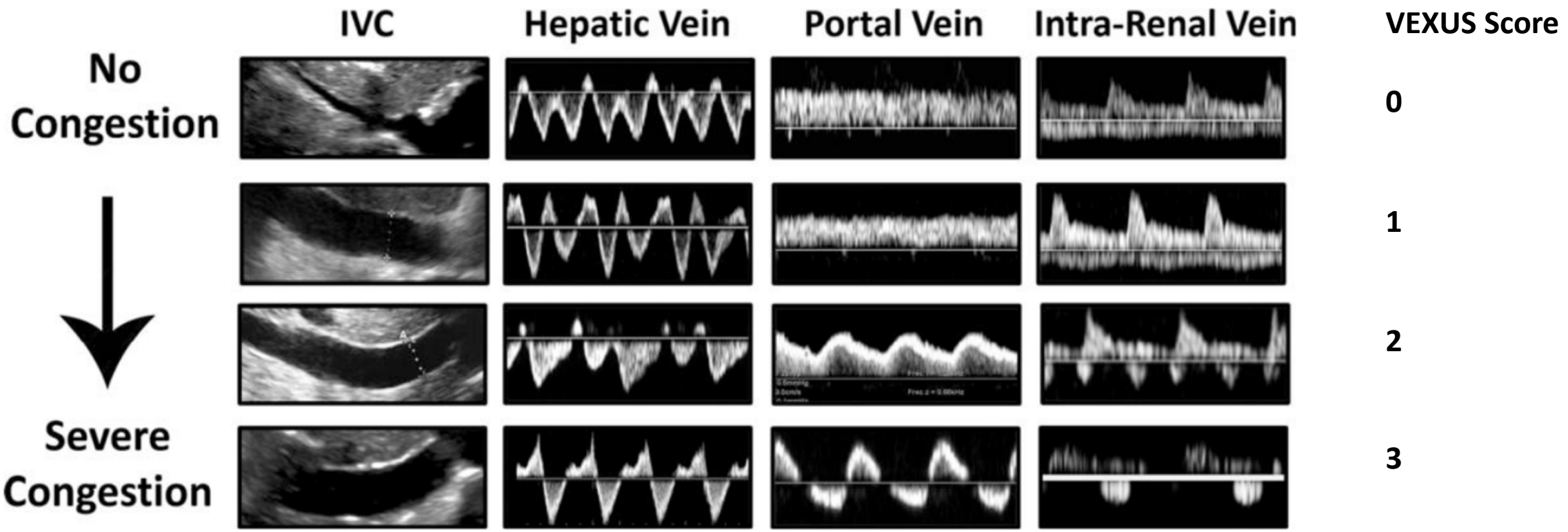
Base de données MIMIC IV, 2318 septic AKI

MPP = MAP-CVP





Evaluer la congestion en échographie :
Venous Excess Ultrasound (VExUS)



Beaubien-Souligny *et al. Ultrasound J 2020*

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Jourdain *et al. Annals of Intensive Care (2025) 15:100*

EERC (diffusion/filtration)

dose maximale: 25 ml/kg/h

(GRADE 1 + /High quality of evidence/Strong agreement).

HD/FI

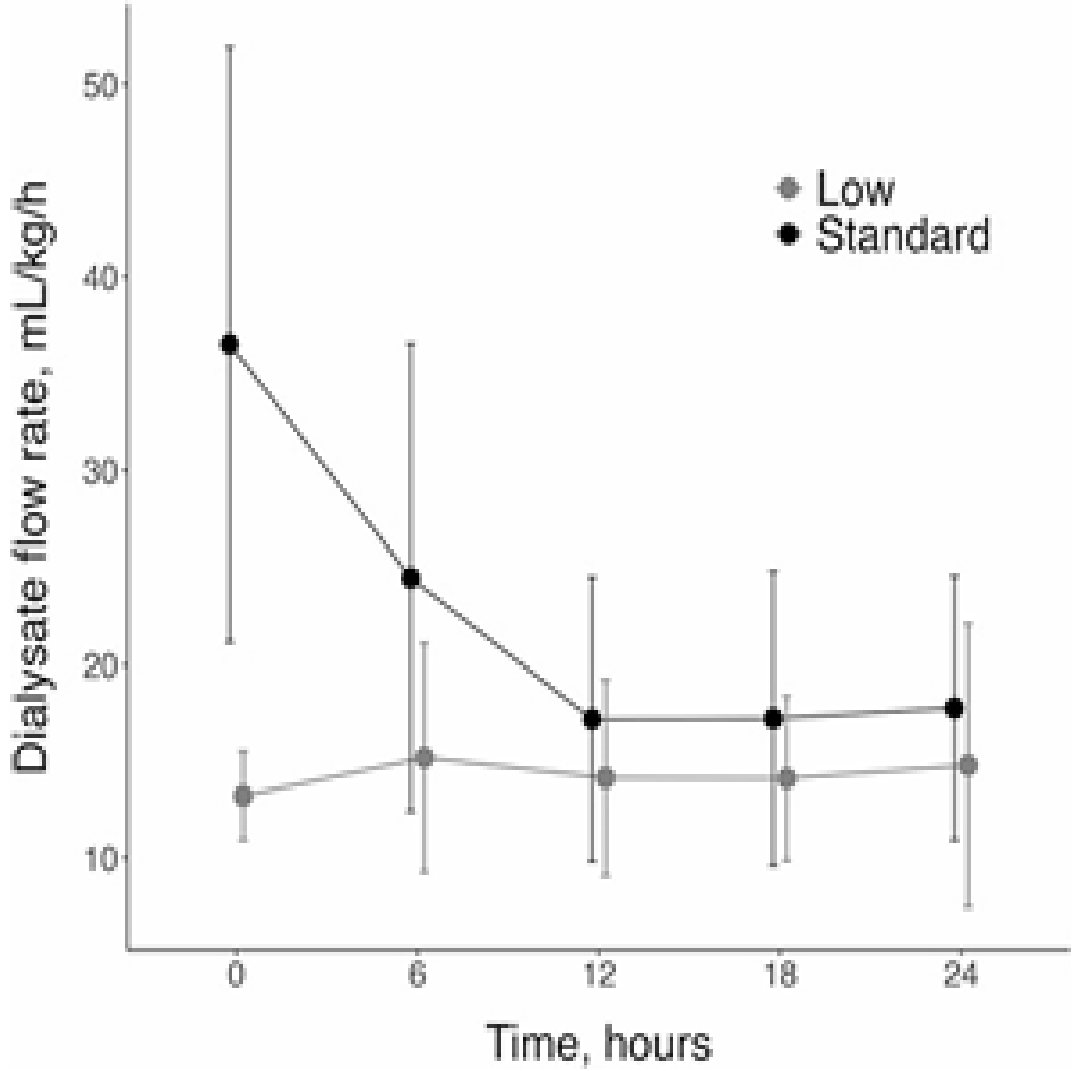
Kt/V< 3.9/7j.

(Panel opinion/Low quality of evidence/Strong agreement).

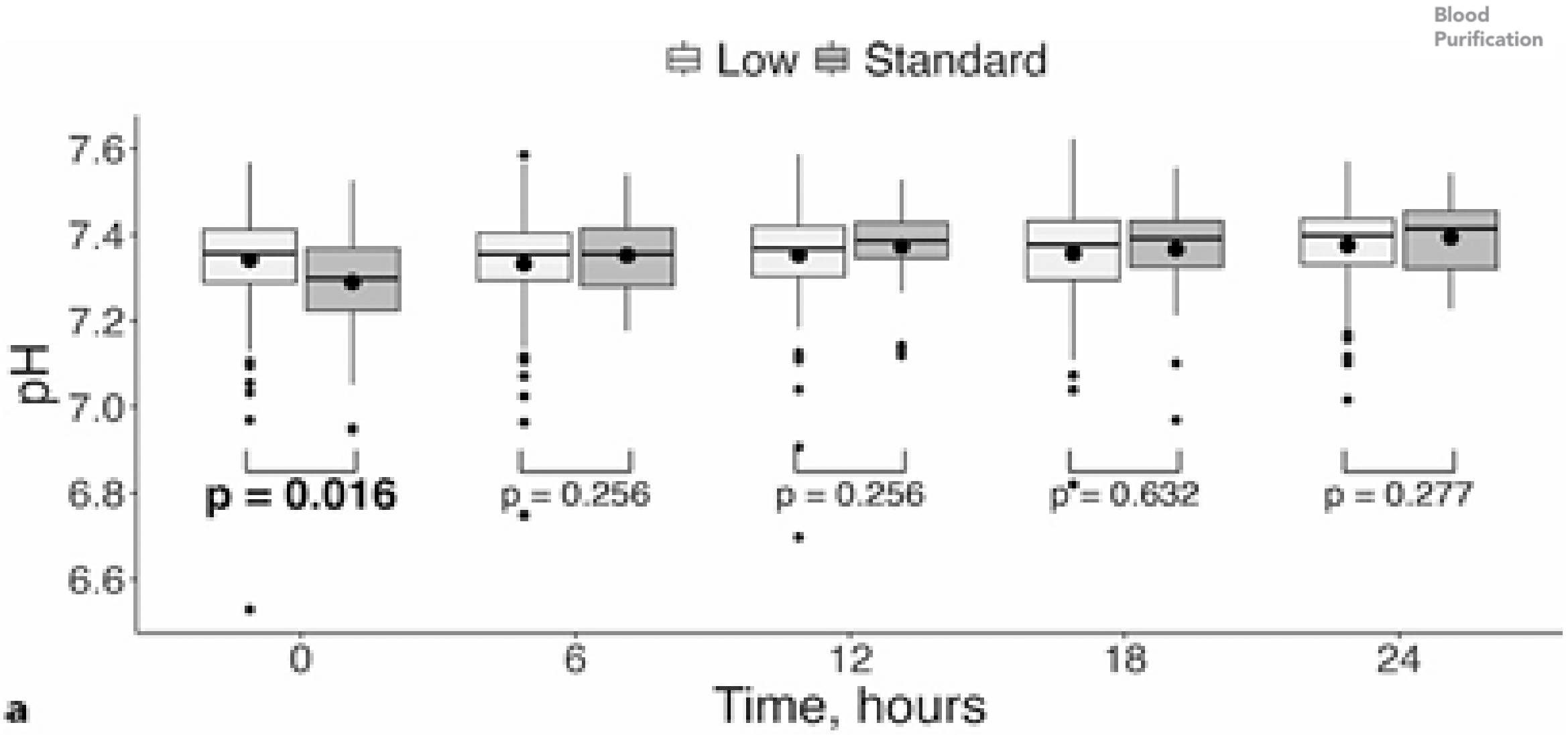
The Effects of early-phase, **LOW-OR STANDARD-INTENSITY** CRRT on acid-base control and clinical outcomes : An observational study

Yagi K, Blood Purif 2024;53:716–724

Characteristics	Low (n = 144)	Standard (n = 50)	p value
Male sex	103 (71.5)	30 (60.0)	0.182
Age, years	67.7 (13.9)	67.6 (14.0)	0.957
Height, cm	162.4 (9.2)	161.3 (9.5)	0.475
Weight, kg	56.8 (11.3)	56.5 (15.0)	0.891
BMI, kg/m^2	21.5 (3.8)	21.5 (4.8)	0.986
APACHE II score	28.8 (8.2)	33.9 (9.8)	0.002
Mechanical ventilation	99 (68.8)	36 (72.0)	0.801
Surgical admission	44 (30.6)	11 (22.0)	0.279
Non-surgical admission	100 (69.4)	39 (78.0)	0.279
At CRRT initiation			
Mean arterial pressure, mm Hg	76.9 (17.3)	75.5 (21.2)	0.684
Noradrenaline use	90 (62.5)	30 (60.0)	0.885
Noradrenaline dose, mg/h	0.60 (0.68)	0.69 (0.78)	0.493
Vasopressin use	56 (38.9)	22 (44.0)	0.640
Vasopressin dose, units/h	0.64 (0.85)	0.72 (0.85)	0.574
Dialysate flow rate (Q_D) from CRRT initiation			
At CRRT initiation, mL/kg/h	13.2 (2.3)	36.5 (15.3)	<0.001
At 6 h, mL/kg/h	15.2 (5.9)	24.5 (12.1)	<0.001
At 12 h, mL/kg/h	14.2 (5.1)	17.2 (7.4)	0.031
At 18 h, mL/kg/h	14.1 (4.2)	17.2 (7.6)	0.033
At 24 h, mL/kg/h	14.8 (7.3)	17.8 (6.8)	0.064



ACID-BASE EQUILIBRIUM COMPARISON



Low-dose CKRT and Mortality in Critically Ill Patients With AKI

Setting & Participants

- Delivered CKRT doses in Japan are typically below KDIGO recommendation of 20–25 mL/kg/h
- Retrospective cohort study
- Single-center in Japan
- Jan 2012-Dec 2021
- N = 494 critically ill patients with AKI treated with CKRT

Analysis

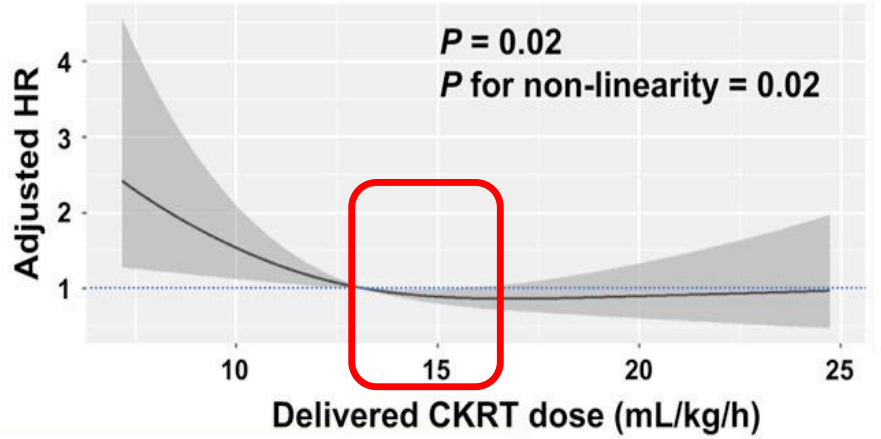
- Multivariable Cox regression
- N = 456 (92.3%) patients received delivered CKRT dose < 20 mL/kg/h
- Median delivered CKRT dose: 13.2 mL/kg/h
- N = 204 (41.3%) patients died within 90 days after CKRT initiation

Results

Increased mortality in the below-median group

Adjusted HR: 1.73
(95% CI: 1.19–2.51, *P* = 0.004)

Delivered CKRT dose as a continuous variable



CONCLUSION: A lower delivered CKRT dose was independently associated with higher 90-day mortality among critically ill patients who mostly received dosing below current KDIGO recommendations.

Keisuke Okamoto, Hidetada Fukushima, Masahiko Kawaguchi, and Kazuhiko Tsuruya

@AJKDonline | DOI: 10.1053/j.ajkd.2024.01.526

AJKD AMERICAN JOURNAL OF KIDNEY DISEASES

LIMIT trial (NCT06014801)

launched in late 2023

Low-intensity Versus Medium-intensity Continuous Kidney Replacement Therapy for Critically Ill Patients

Last updated: 26 novembre 2023 Sponsor: Jikei University School of Medicine Overall Status: Active - Recruiting

Phase	Condition	Treatment	Clinical Study ID
2/3	Kidney Failure Renal Failure Kidney Disease	Dialysate fluid, Filtration replacement fluid	NCT06014801 JKI23-002 jRCTs031230292

Ages > 18

All Genders

400 adults with AKI requiring CKRT

8 centers in Japan

12 versus 25 mL/kg/h

with a Primary end point of KRT free days through day 28.

Randomised controlled study investigating standard dose continuous renal replacement therapy (CRRT) versus low-dose CRRT in critically ill patients with acute kidney injury (AKI):
study protocol for a prospective, randomised, controlled, international, multicentre trial (the 'Ketzerei' trial)
Strauss C et al . bmjopen-2025-105459

The Ketzerei trial: International, multicentre randomised, controlled trial,
lower effluent dose (10–15 mL/kg/hour) accelerates renal recovery and reduces the time on CRRT
vs guideline directed standard effluent dose (25–30 mL/kg/hour).

The study aims to enrol 150 critically ill patients with a dialysis-dependent AKI.

Eligible patients will be randomised to receive either a standard effluent dose (control group, **25–30 mL/kg/h**) or lower effluent dose (interventional group, **10–15 mL/ kg/h**).

Primary endpoint: number of days free from CRRT and alive (from randomisation through day 28)

ORIGINAL

Meropenem and piperacillin/tazobactam optimised dosing regimens for critically ill patients receiving renal replacement therapy

Roberts JA et al. Intensive Care Med. 2025 Sep;51(9):1628-1640.

Piperacillin/tazobactam dosing nomogram for a unbound average concentration target of ≥ 16mg/L (global 100% $fT_{>MIC}$ and 4× MIC for Enterobacterales) and a higher target of ≥ 32–64 mg/L (empirical treatment and 4× MIC for *P. aeruginosa*), considering a toxicity threshold of 160 mg/L [31] and stratified by RRT modality, intensity, and urine output

RRT modality	RRT intensity	Anuria		Urine output ≥ 100 mL/24 h	
		Standard target (steady-state concentration ≥ 16 mg/L)	Higher target (steady-state concentration ≥ 32–64 mg/L)	Standard target (steady-state concentration ≥ 16 mg/L)	Higher target (steady-state concentration ≥ 32–64 mg/L)
For all types of modality, time and settings: If starting treatment, administer a 4 g/0.5 g loading dose over a 30-min short infusion and immediately after initiate the continuous infusion at the recommended daily dose					
Continuous RRT	1.5 L/h	6 g/0.725 g–8 g/1 g per day CI	6 g/0.725 g–8 g/1 g per day CI[a]	6 g/0.725 g–8 g/1 g per day CI	10 g/1.25 g–12 g/1.5 g daily in CI[a]
	2.5 L/h		8 g/1 g–10 g/1.25 g per day CI[a]		
	3.5 L/h				12 g/1.5 g–16 g/2 g per day CI[a]
Short SLED (~6 h)	9 L/h	6 g/0.725 g–8 g/1 g per day CI	8 g/1 g–10 g/1.25 g per day CI[a]	6 g/0.725 g–8 g/1 g per day CI	12 g/1.5 g–16 g/2 g per day CI[a]
	12 L/h		10 g/1.25 g–12 g/1.5 g per day CI[a]		
	15 L/h				
Intermediate SLED (~8 h)	9 L/h	6 g/0.725 g–8 g/1 g per day CI	10 g/1.25 g–12 g/1.5 g per day CI[a]	6 g/0.725 g–8 g/1 g per day CI	12 g/1.5 g–16 g/2 g per day CI[a]
	12 L/h				
	15 L/h		12 g/1.5 g–16 g/2 per day CI[a]		
Long SLED (~ 12 h)	9 L/h	6 g/0.725 g–8 g/1 g per day CI	10 g/1.25 g–12 g/1.5 g per day CI[a]	6 g/0.725 g–8 g/1 g per day CI	12 g/1.5 g–16 g/2 g per day CI[a]
	12 L/h		12 g/1.5 g–16 g/2 g per day CI[a]		
	15 L/h				16 g/2 g per day CI

ORIGINAL

Meropenem and piperacillin/tazobactam optimised dosing regimens for critically ill patients receiving renal replacement therapy

Roberts JA et al. Intensive Care Med. 2025 Sep;51(9):1628-1640.

Meropenem dosing nomogram for a standard steady-state concentration target of ≥ 2 mg/L (global 100% $fT_{>MIC}$ and 4× MIC for Enterobacterales) and higher target of ≥ 4–8 mg/L (empirical treatment and 4× MIC for *P. aeruginosa*), considering a toxicity threshold of 45 mg/L [30] and stratified by RRT modality, intensity and urine output

RRT modality	RRT intensity	Oligoanuria		Urine output ≥ 500 mL/24 h	
		Standard target (steady-state concentration ≥ 2 mg/L)	Higher target (steady-state concentration ≥ 4–8 mg/L)	Standard target (steady-state concentration ≥ 2 mg/L)	Higher target (steady-state concentration ≥ 4–8 mg/L)
For all types of modality, time and settings: If starting treatment, administer a 1 g loading dose over a 30-min short infusion and immediately after initiate the continuous infusion at the recommended daily dose					
Continuous RRT	1.5 L/h 2.5 L/h 3.5 L/h	1 g–1.5 g per day CI	1.5–2 g per day CI 2 g per day CI	1 g–1.5 g per day CI	3 g per day CI
Short SLED (~6 h)	9 L/h 12 L/h 15 L/h	1 g–1.5 g per day CI	2 g per day CI 3 g per day CI	1 g–1.5 g per day CI	3 g per day CI
Intermediate SLED (~8 h)	9 L/h 12 L/h 15 L/h	1 g–1.5 g per day CI	2 g per day CI 3 g per day CI	1 g–1.5 g per day CI	3 g per day CI
Long SLED (~12 h)	9 L/h 12 L/h 15 L/h	1 g–1.5 g per day CI	3 g per day CI	1 g–1.5 g per day CI	3 g per day CI 3–4 g per day CI

.1 Timing EER

.2 Tolérance Hémodynamique Intra Dialytique, Ultrafiltration

.3 Dose de Dialyse Aiguë

.4 Sevrage de l’EER et Devenir Ultérieur de la Fonction Rénale

Renal replacement therapy in an intensive care unit: guidelines from the SRLF-GFRUP. consensus conference

Jourdain *et al. Annals of Intensive Care (2025) 15:100*

Sevrage de l'EER

doit être évalué quotidiennement: **reprise de diurèse**
En cas de sevrage, relais par HDI quand possible

(Panel opinion/Low to moderate quality of evidence/Strong agreement).

Novel biomarkers for predicting successful liberation of renal replacement therapy for acute kidney injury: a systematic review

Xu et al. Critical Care (2025) 29:213

16 studies (3020 patients) 23 biomarkers

Urinary neutrophil gelatinase associated lipocalin (**uNGAL**) fair predictive performance with 4 studies (AUC 0.766, I_2= 39.8%).

When excluding a study focused on long-term outcomes, the result showed a better predictive ability with low heterogeneity (AUC 0.801, I_2= 0%).

Plasma proenkephalin A (PENK) and serum NGAL also showed potential, but quantitative synthesis was limited by study number and heterogeneity.

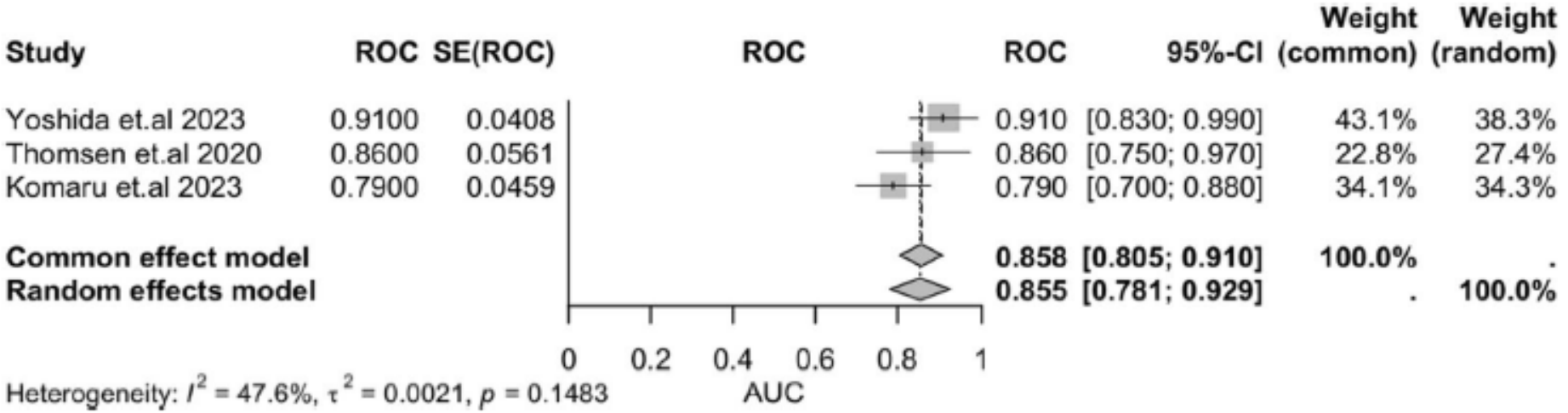
The cut-off value also varied widely, complicating clinical translation.

In addition, multivariable models combining novel biomarkers with clinical indicators have also demonstrated promising predictive potential.

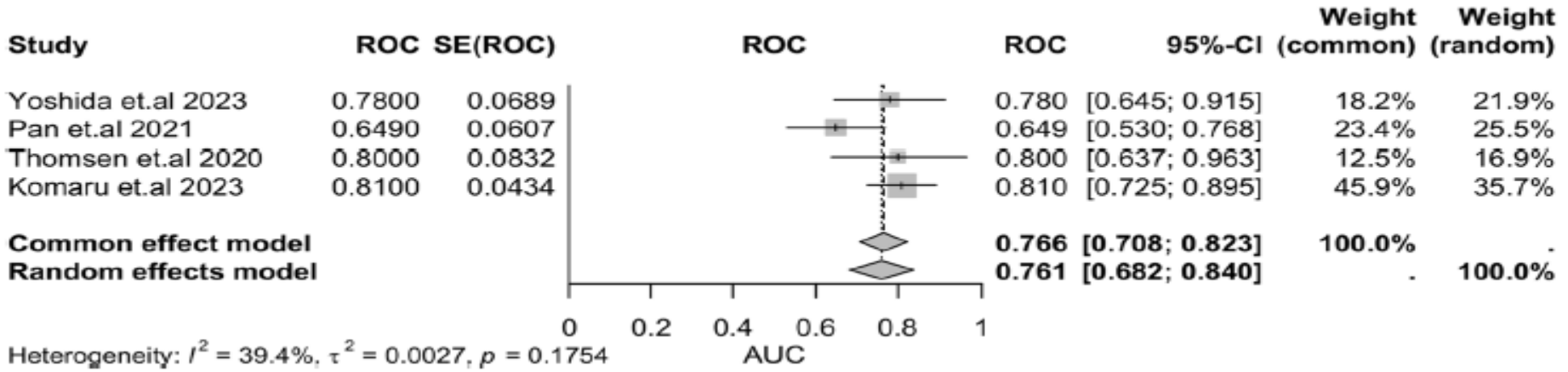
However, due to the limited number of studies and inconsistent conclusions,further exploration is needed.

Pooled analysis for studies to predict successful liberation of RRT

Xu et al. Critical Care (2025) 29:213



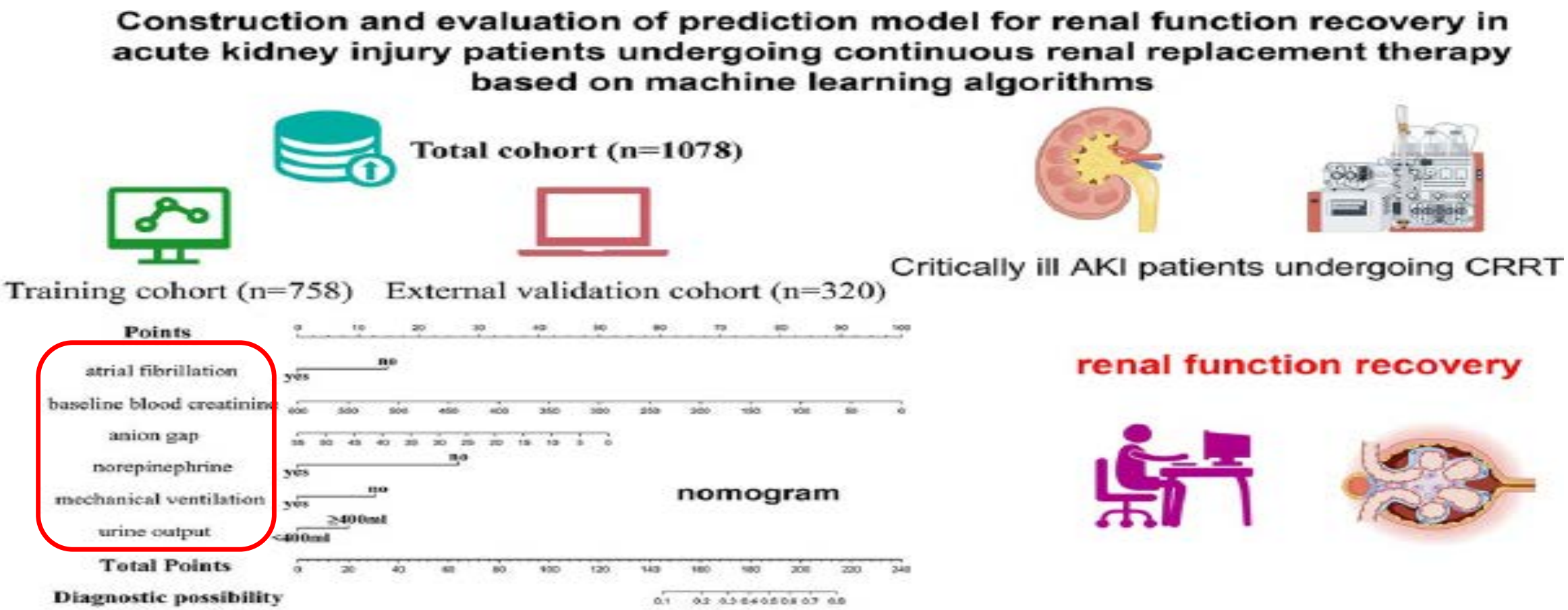
Urine Output



U NGAL

Construction and evaluation of prediction model for renal function recovery in acute kidney injury patients undergoing continuous renal replacement therapy based on machine learning algorithms

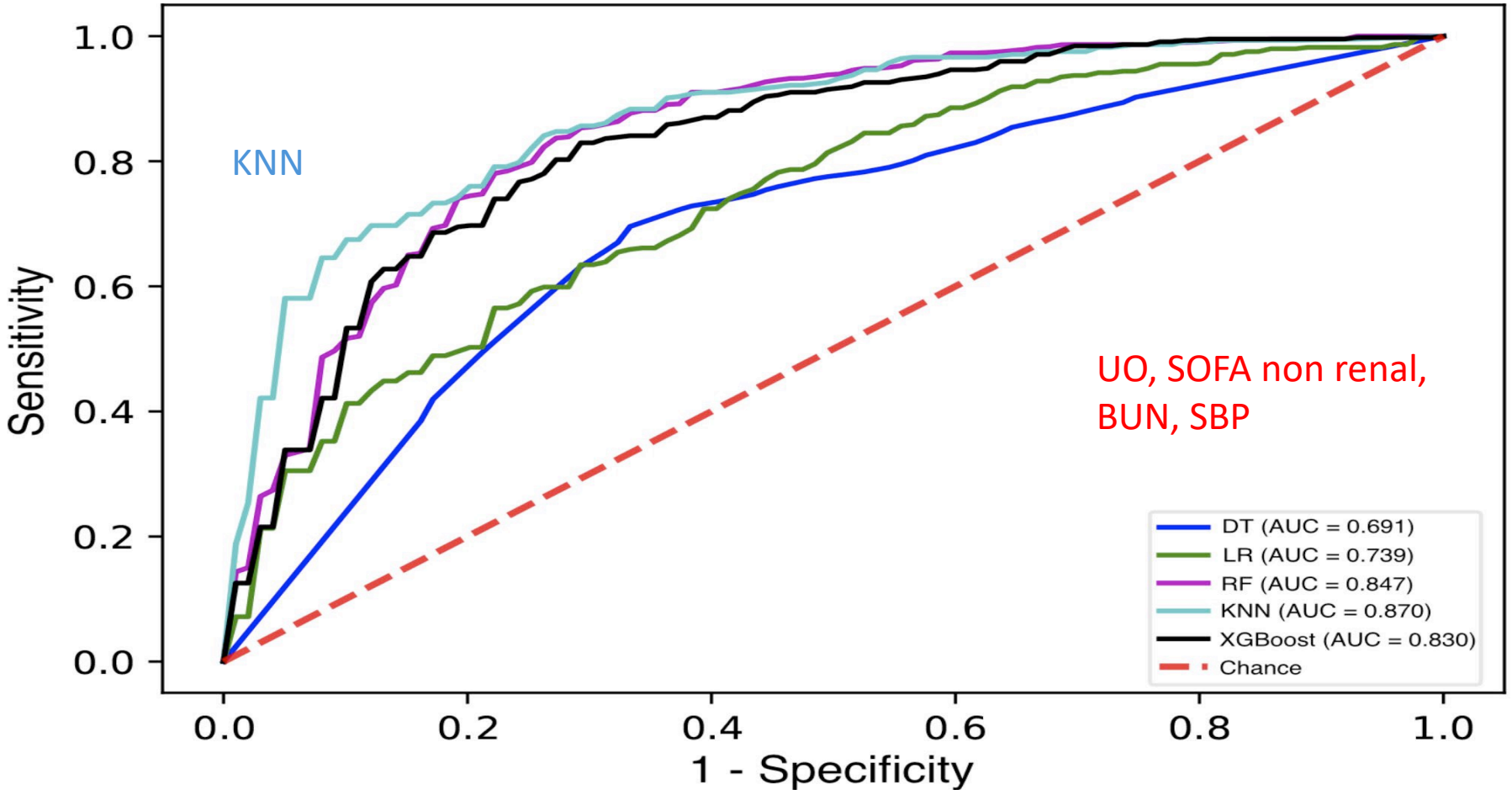
Zhong L et al. Annals of Medicine 2025, VOL. 57, NO. 1, 2561794



Conclusions: Among the 10 machine learning models developed using data from the two datasets to predict renal function recovery in critically ill AKI patients undergoing CRRT, the Lasso-LR model demonstrated the best performance. It can serve as a valuable tool for more efficient clinical disease management and prognostic assessment.

Factors and machine learning models for predicting successful discontinuation of continuous renal replacement therapy in critically ill patients with AKI:
a retrospective cohort study based on MIMIC-IV database

Sheng *et al. BMC Nephrology* (2024) 25:407



475/ 599 AKI cessation CRRT

Successful discontinuation of CRRT
no CRRT requirement within 72 h
after stopping CRRT.

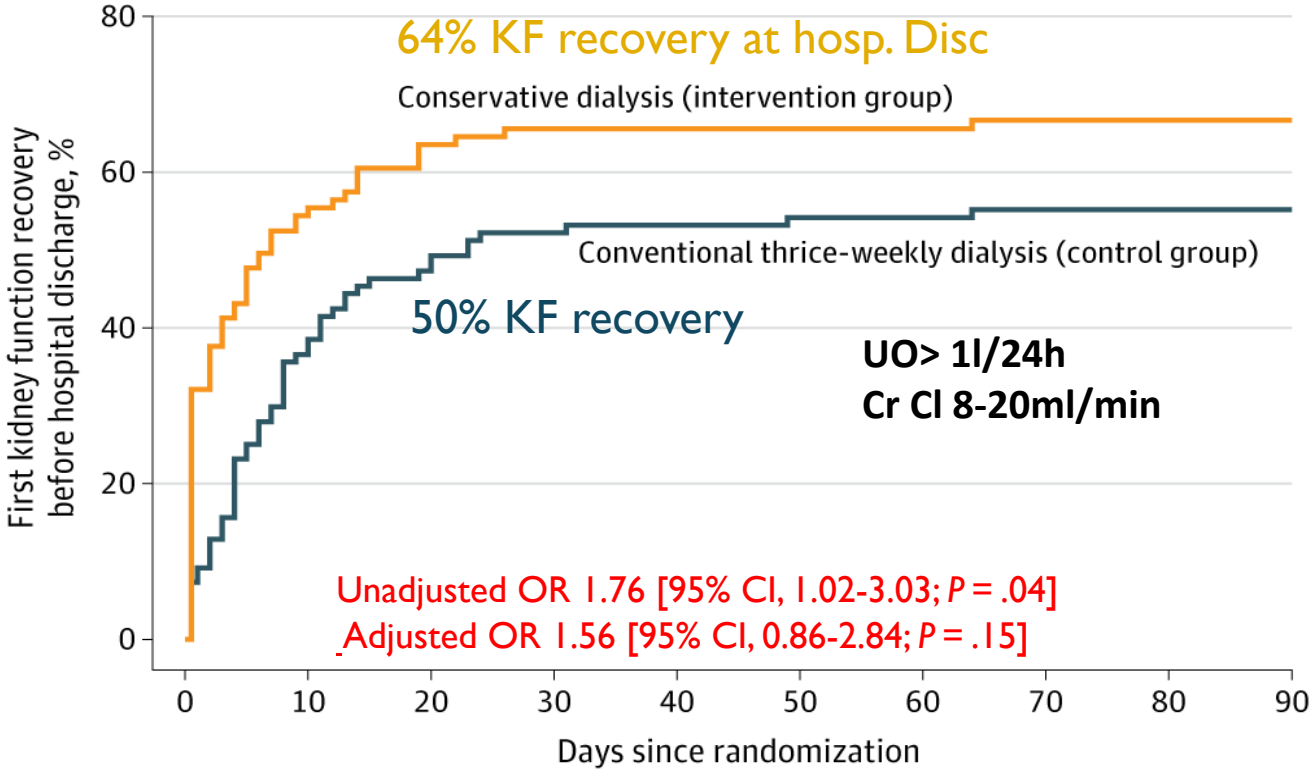
KNN: Machine learning

Receiver operating characteristic curves for all of the prediction models.

A Conservative Dialysis Strategy and Kidney Function Recovery in Dialysis-Requiring AKI

The Liberation From Acute Dialysis (LIBERATE-D) Randomized Clinical Trial

K D. Liu, et al. JAMA November 7, 2025, doi: 10.1001/jama.2025.21530



No. of patients without kidney function recovery										
Conservative dialysis	109	45	36	33	31	31	31	30	30	30
Conventional thrice-weekly dialysis	109	65	54	49	47	46	46	45	45	45

Time to First Kidney Function Recovery Before Hospital Discharge

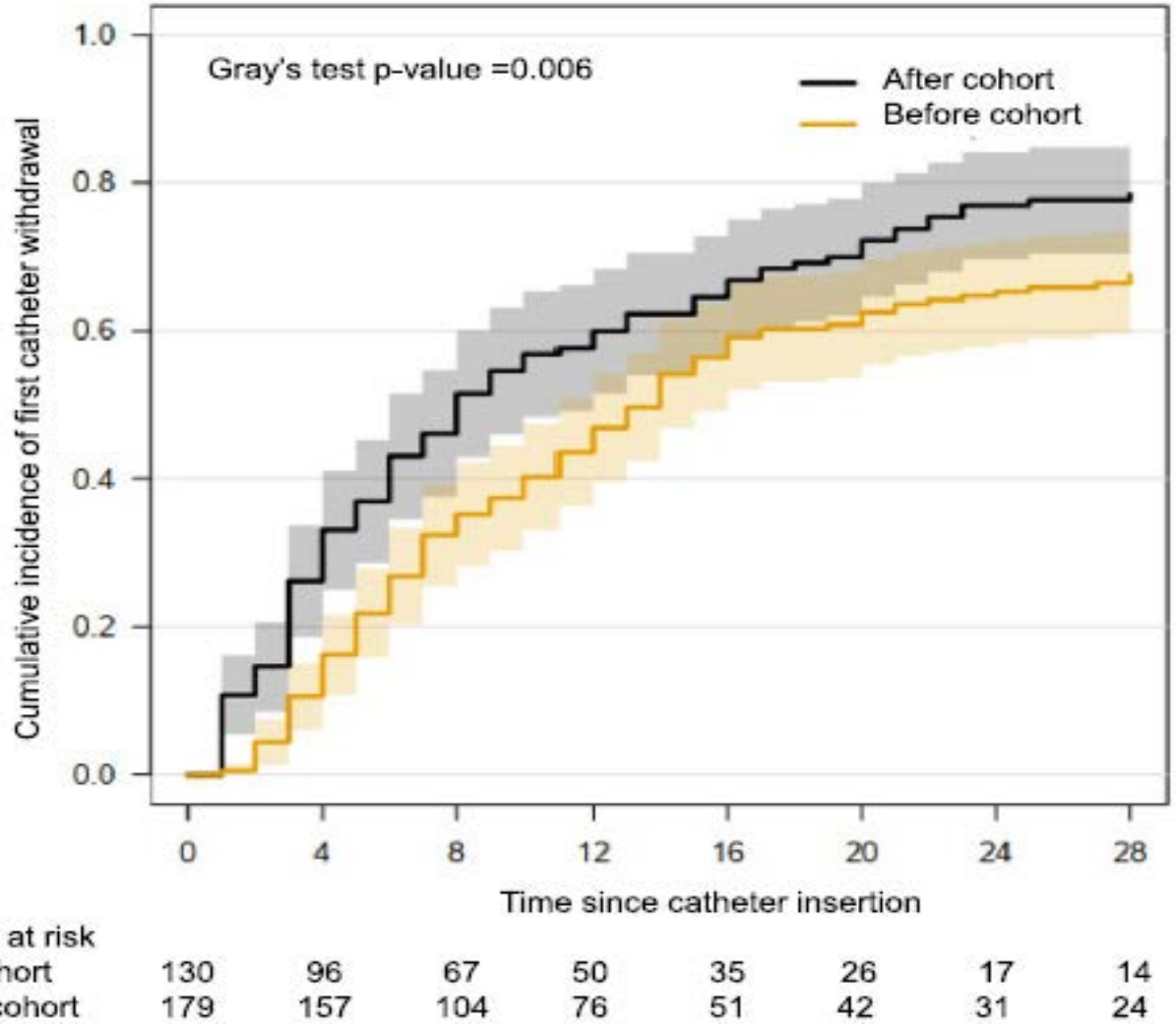
218 AKI HDI

Median period until 1[irst] kidney F
Rec. before hosp. discharge
Conserv.: 5 d (IQR, 0-12 D)
Conven. : 8 d (IQR, 4-16 D)

No significant differences
length of hospitalization after R
death rates at days 28 and 90

Effects of the urinary urea excretion index on the decision to wean ICU patients with acute kidney injury from renal replacement therapy: a before-after multicentre study (D-STOP)

Bodot *et al. Critical Care (2025) 29:261*



Multicentre before-after study non-obstructive AKI requiring RRT

Before cohort (2013–2015) to after cohort (2017–2019)

A: weaning protocol was implemented: as soon as the **UUEI>1.35 mmol/kg/24 h, stop RRT and withdraw KT**

B: KT withdrawn at the physician's discretion.

Primary outcome: number of RRT catheter-free days on day 28 after initiating RRT.

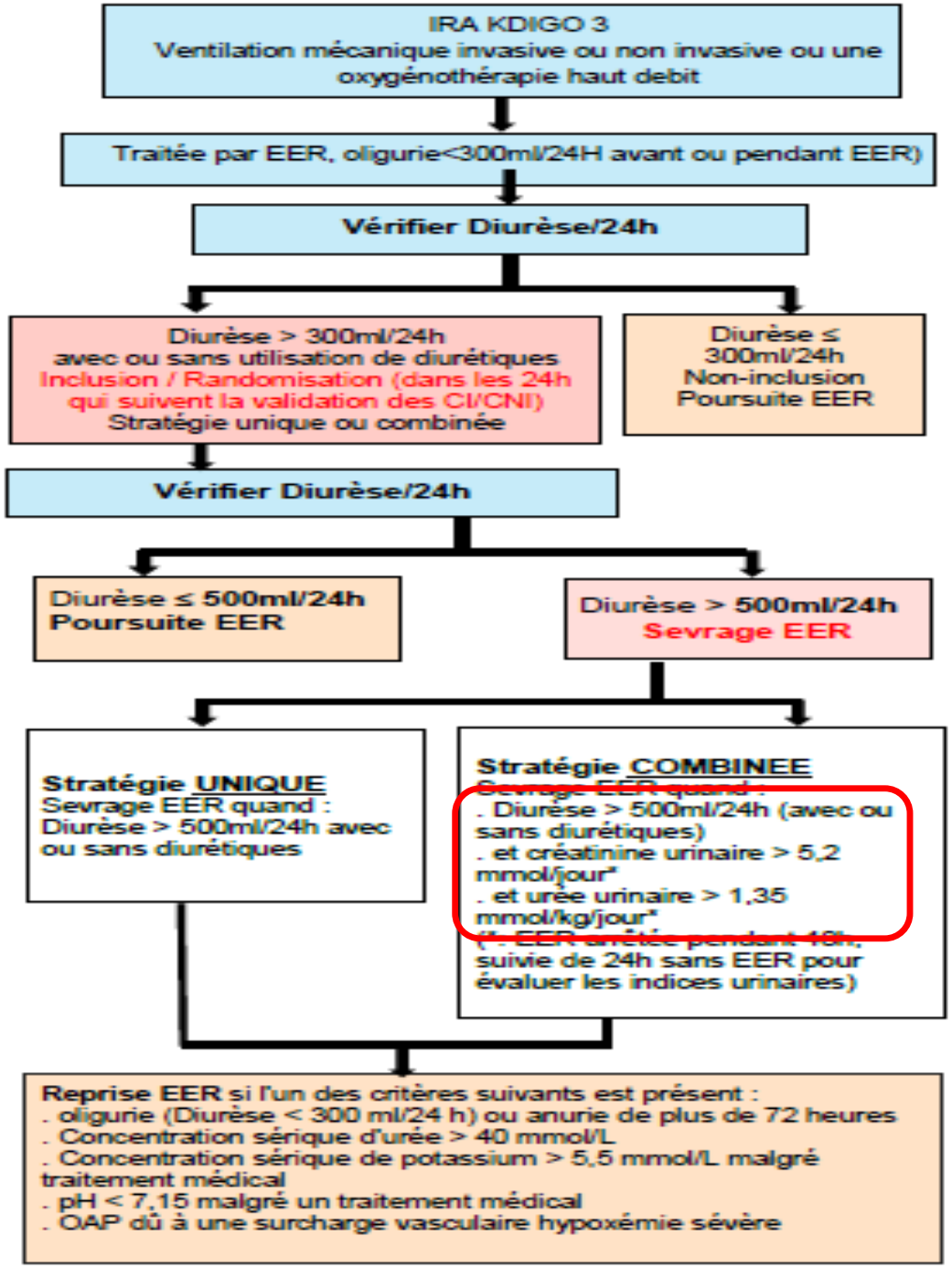
KT-free days in B and A on day 28

13.0 (IQR 0.0–21.0) vs. 16.5 (IQR 4.3–24.0), (p = 0.02).

Adjusted OR KT -free days

1.11 (95% CI 1.03–1.19; p = 0.006)

in favour of the after cohort.



SEVRAGE DE L'ÉPURATION EXTRA-RÉNALE DES PATIENTS CRITIQUES ATTEINTS D'INSUFFISANCE RÉNALE AIGÜE :
PERFORMANCES PRÉDICTIVES DES PARAMÈTRES URINAIRES

Weaning of Renal Replacement Therapy in Critically Ill Patients with Acute Kidney Injury:
Predictive Performance of Urinary Parameters

Essai Multicentrique WECAN PHRC-N 2020

K Klouche, A Lautrette

WECAN Study

ClinicalTrials.gov identifier NCT06214390

RECOMMANDATIONS FRANÇAISES et EUROPÉENNES

2025

Jourdain *et al. Annals of Intensive Care* (2025) 15:100
https://doi.org/10.1186/s13613-025-01517-0

Annals of Intensive Care

REVIEW Open Access

Renal replacement therapy in an intensive care unit: guidelines from the SRLF-GFRUP consensus conference

Mercè Jourdain[1*], Ines Gragueb Chatti[2], Brahim Housni[3], Pierre Jaquet[4], Mélissa Jezequel[5], Oumar Kane[6], Béatrice La Combe[7], Mickael Landais[8], Mehdi Marzouk[9], Etienne de Montmollin[10], Guillaume Mortamet[11], Mai-Anh Nay[12], Charlotte Salmon-Gandonnière[13], Sophie Perinel-Ragey[14], Jérôme Rambaud[15], Joanna Schmitt[16], Marie Simon[17], Julie Starck[18], Arnaud W. Thille[19] and Pierre-François Dequin[20]

Intensive Care Med (2025) 51:461–477
https://doi.org/10.1007/s00134-025-07840-1

CONFERENCE REPORTS AND EXPERT PANEL

European Society of Intensive Care Medicine (ESICM) 2025 clinical practice guideline on fluid therapy in adult critically ill patients: part 2—the volume of resuscitation fluids

Armand Mekontso Dessap[1,18*], Fayez AlShamsi[2], Alessandro Belletti[3], Daniel De Backer[4], Anthony Delaney[5], Morten Hylander Møller[6], Segolène Gendreau[1,18], Glenn Hernandez[7], Flavia R. Machado[8], Mervyn Mer[9], Manuel Ignacio Monge Garcia[10], Sheila Nainan Myatra[11], Zhiyong Peng[12], Anders Perner[6], Michael R. Pinsky[13], Sameer Sharif[14], Jean-Louis Teboul[15], Antoine Vieillard-Baron[16] and Waleed Alhazzani[17,19] on behalf of the European Society of Intensive Care Medicine

Intensive Care Med
https://doi.org/10.1007/s00134-025-08058-x

CONFERENCE REPORTS AND EXPERT PANEL

European Society of Intensive Care Medicine Clinical Practice Guideline on fluid therapy in adult critically ill patients: Part 3—fluid removal at de-escalation phase

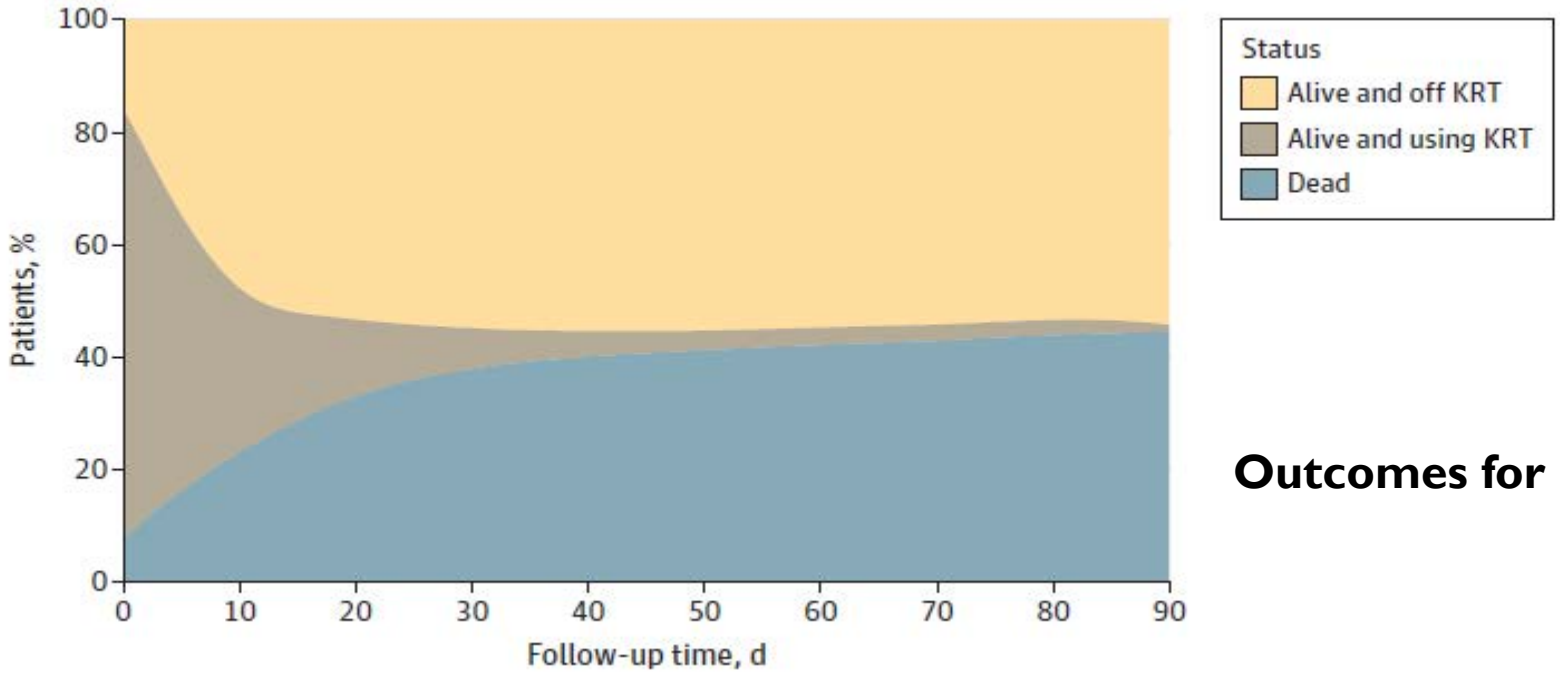
Marlies Ostermann[1*], Fayez Alshamsi[2,27], Antonio Artigas Raventos[3], Maurizio Cecconi[4,5], Carole Ichai[6], Christina Jones[7], Manu L. N. G. Malbrain[8,9,28,29], Xavier Monnet[10], Marek Nalos[11,12,25], Zhiyong Peng[13], Carmen A. Pfortmueller[14,15], John Prowle[16,17], Otavio Ranzani[18,26], Manu Shankar-Hari[19,20], Adrian Wong[21], Morten Hylander Møller[22,23] and Daniel De Backer[24] on behalf of the European Society of Intensive Care Medicine

MERCI de VOTRE ATTENTION

Hydrocortisone and Risk Factors for Kidney Replacement Therapy in Septic Shock

Lachlan H. et al. *JAMA Network Open.* 2025;8(5):e2512279.

Cohort study post hoc analysis ADRENAL RCT 2013-17, a RCT of HSHC in septic shock in 69 ICUs (Aust, UK, NZ, AS, DK)
3161 patients (median age, 65 [53-74] years, 61% male **1589 patients hydrocortisone and 1572 placebo.**



JAMA Network Open

Outcomes for Patients With KRT Requirement

(701/3161)

Variable	Outcome, No./total No. (%)		Univariate		Multivariate[a]	
	KRT (n = 701)	No KRT (n = 2460	OR (95% CI)	*P* value	OR (95% CI)	*P* value
Treatment allocation						
Placebo	372/701 (53)	1200/2460 (49)	1 [Reference]	.05	1 [Reference]	.01
Hydrocortisone	329/701 (47)	1260/2460 (51)	0.84 (0.71-1.00)		0.79 (0.66-0.95)	