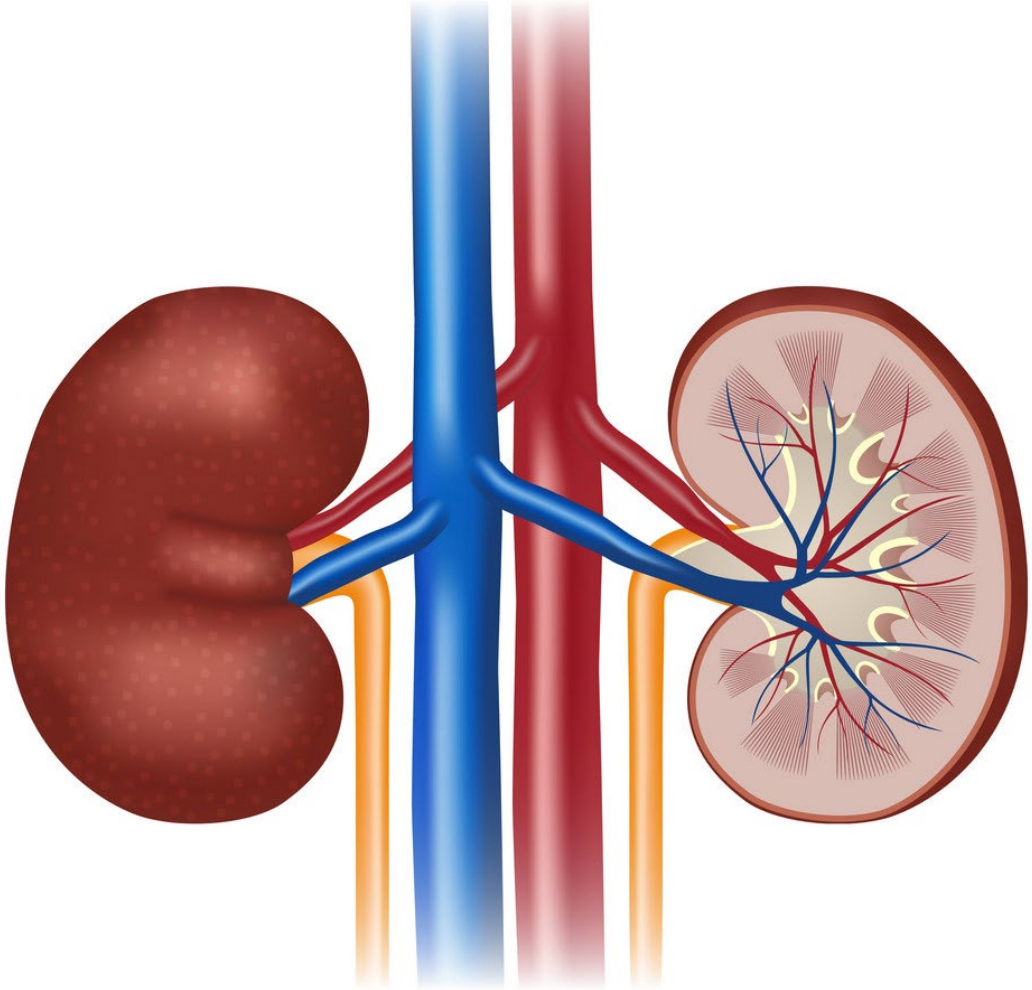

ROK 2021 v přehledu

Jiří Chvojka

COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY

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FESTIVAL INTENZIVNÍ MEDICÍNY

NEFROTOXICITA

KI REPORTS
KIReports.org
CLINICAL RESEARCH

Vancomycin-Associated Tubular Casts and Vancomycin Nephrotoxicity

Check for updates

- Toxicita vankomycinu přičítána ATN či TIN
- Tubulární válce recentně popsaným patfyz mechanizmem
- 37 biopsií ledvin (28 dg. vancomycinové toxicity)
- Precipitace vancomycinu a uromodulinu v distálních tubulech

Table 1. Demographic data and pathologic findings of acute kidney injury patients who received vancomycin (N = 37)

Demographic data			
Age, range, yrs	23 to 84		
Age, mean, yrs	54		
Female:male ratio	15:12		
Pathologic findings[a]			
Acute or chronic TIN	3 (8.1)		
ATN	5 (13.5)		
Both ATN and TIN	25 (67.6)		
IFTA	4 (10.8)		
VN, 28 (75.7)		No VN, 9 (24.3)	
VTCs	No VTCs	VTCs	No VTCs
n = 25 of 28 (89.3)	n = 3 of 28 (10.7)	n = 1 of 9 (11.1)	n = 8 of 9 (88.9)

ATN, acute tubular necrosis; IFTA, interstitial fibrosis and tubular atrophy; TIN, tubulointerstitial nephritis; VN, vancomycin nephrotoxicity; VTCs, vancomycin-associated tubular casts.

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NEFROTOXICITA

AJN
American Journal
of Nephrology

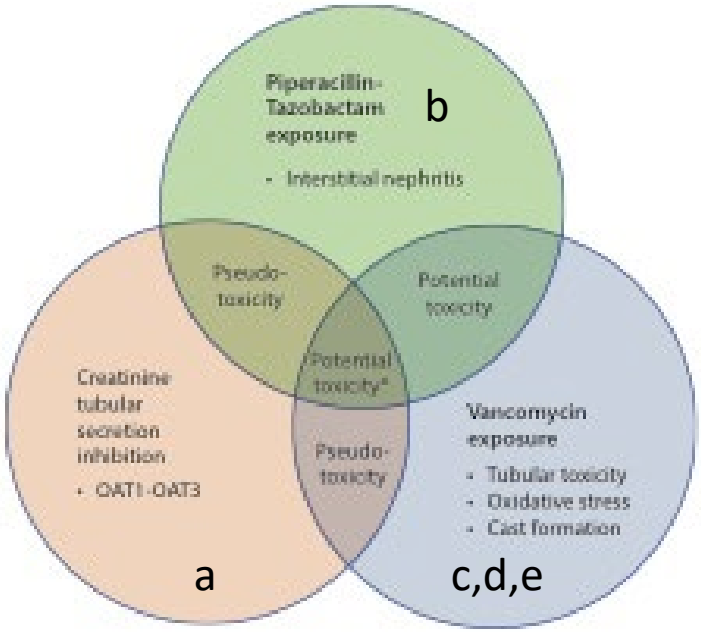
In-Depth Topic Review

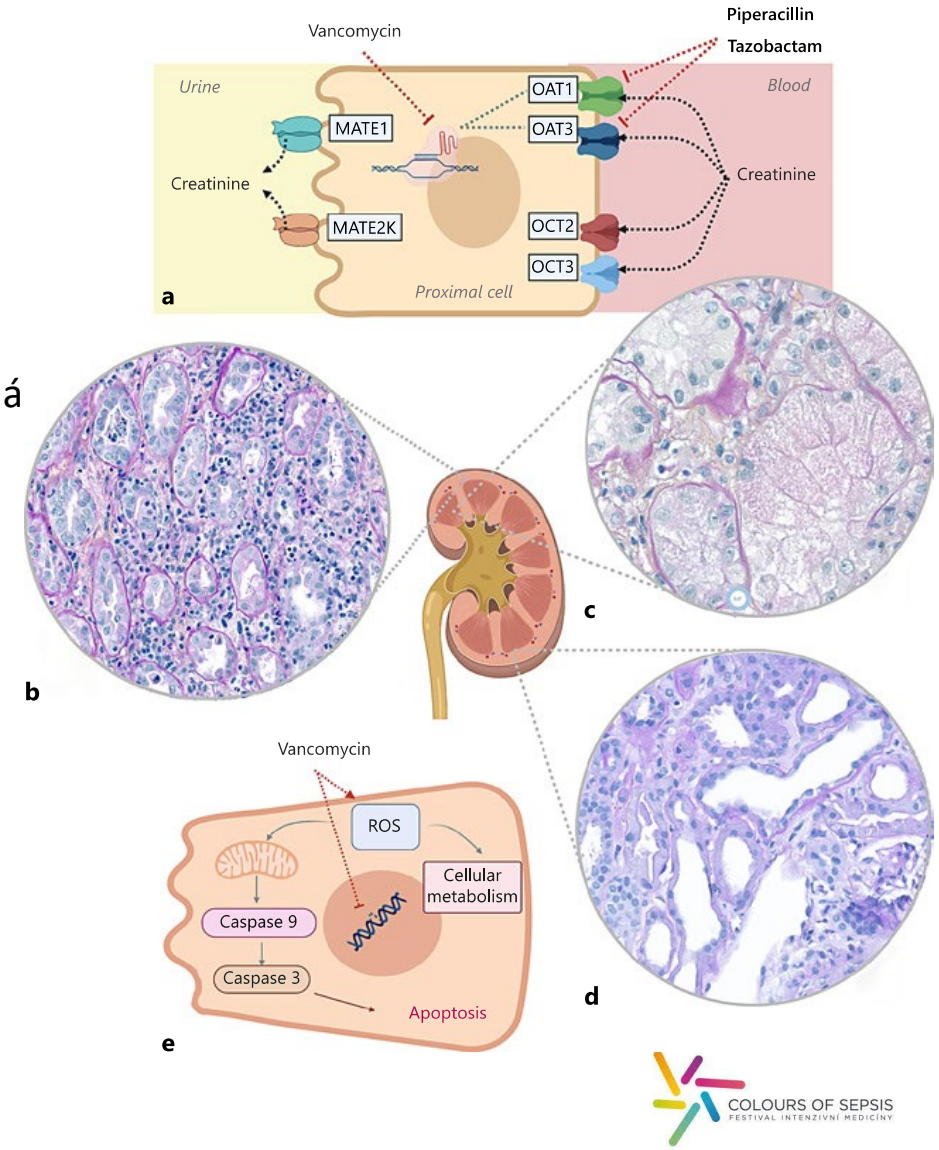
Am J Nephrol 2021;52:85–97
DOI: 10.1159/000513742

Received: October 2, 2020
Accepted: December 11, 2020
Published online: March 18, 2021

Nephrotoxicity from Vancomycin Combined with Piperacillin-Tazobactam: A Comprehensive Review

- Zvýšené riziko při kombinaci pip/taz + vanco
- Rizikové faktory: obezita, CKD, tíže akutního stoná
- Vyvarovat se kombinaci
- Důsledné TDM (vanco)





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FESTIVAL INTENZIVNÍ MEDICÍNY

NEFROTOXICITA

TAKE HOME MESSAGE
Iniciální dg. a volba ATB léčby *Je nutná pip/taz + vanco kombinace?* *Anamnéza/průkaz MRSA?* *Suspekce na katétrový infekt či infekt prostetického materiálu?* *Existuje alternativní ATB léčba?*
Identifikuj rizikové pacienty *Obezita?* *CKD?* *Anamnéza lékové TIN?*
Dávkování vancomycinu *Pečlivé TDM*
Minimalizace trvání ATB léčby
Vyber méně toxickou kombinaci
Monitoruj denně ledvinné funkce

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FESTIVAL INTENZIVNÍ MEDICÍNY

KDY ZAHÁJIT KST

	AKIKI 1	ELAIN	IDEAL-ICU	STARRT-AKI
Sites	31 (Francie)	1 (Německo)	29 (Francie)	168 (15 zemí)
#	620	231	488	3019
Časná RRT kritéria	KDIGO 3	KDIGO 2	KDIGO 3	KDIGO 3
Pozdní RRT kritéria	Absolutní indikace	AKI st 3/abs indikace	Absolutní indikace	Absolutní indikace
Pacienti	80% med/20% surg	93% surg	100% septický šok	33% surg 58% sepse
Kumulativní FB při randomizaci	N/A	+6,5L	+3,2L	2,7L
Primární endpoint	60d mortalita	90d mortalita	90d mortalita	90d mortalita
Mortalita – časná RRT	48,5%	39,3%	58%	43,9%
Mortalita – pozdní RRT	49,7%	54,7%	54%	43,6%
% RRT v pozdní větvi	51%	90,8%	62%	61%

KDY ZAHÁJIT KST

Comparison of two delayed strategies for renal replacement therapy initiation for severe acute kidney injury (AKIKI 2): a multicentre, open-label, randomised, controlled trial

Lancet 2021; 397: 1293–300

	Delayed RRT strategy group (n=137)	More-delayed RRT strategy group (n=141)	p value
RRT-free days			
All patients	12 (0–25)	10 (0–24)	0·93
Survivors	24 (15–27)	23 (14–28)	0·54
Number of patients who actually received RRT	134 (98%)	111 (79%)	<0·0001
Time from randomisation to RRT, h	3 (2–5)	33 (24–60)	<0·0001
Number of RRT sessions*	5 (2–10)	5 (2–10)	0·75
Duration of RRT days*	5 (2–10)	5 (2–10)	0·75
Modality, first day*			
Intermittent RRT	81 (60%)	64 (58%)	0·53
Continuous RRT	52 (39%)	44 (40%)	..
Both modalities	1 (1%)	3 (3%)	..
Mortality			
At day 28	52 (38%)	63 (45%)	0·26
At day 60	60 (44%)	77 (55%)	0·071
At ICU discharge	55 (40%)	66 (47%)	0·26
At hospital discharge	61 (45%)	75 (53%)	0·15
Patients with treatment limitation in the ICU	37 (27%)	45 (32%)	0·39
Ventilator-free days	0 (0–17)	0 (0–19)	0·59
Vasopressor-free days	21 (3–27)	15 (0–27)	0·28
Length of ICU stay	18 (12–31)	16 (10–32)	0·64
Length of hospital stay	34 (17–51)	29 (15–58)	0·74
Renal function recovery at day 60†	21 (51)	29 (69)	0·10

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KDY ZAHÁJIT KST

- Který pacient bude mít z KST prospěch?
- **Nadále neexistuje spolehlivý klinický či laboratorní indikátor.**

COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY

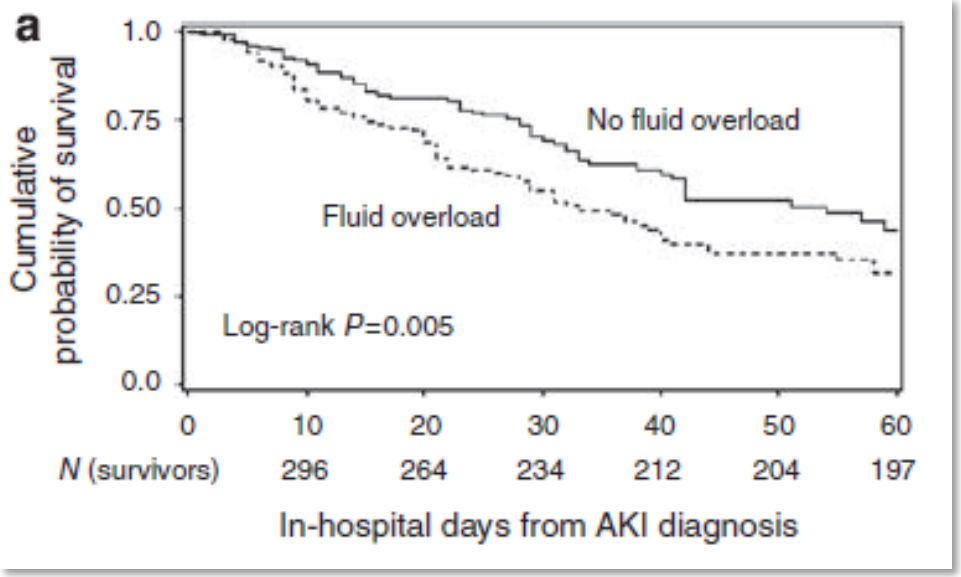
ULTRAFILTRACE

Fluid accumulation, survival and recovery of kidney function in critically ill patients with acute kidney injury

Josée Bouchard[1], Sharon B. Soroko[1], Glenn M. Chertow[2], Jonathan Himmelfarb[3], T. Alp Ikizler[4], Emil P. Paganini[5] and Ravindra L. Mehta[1], Program to Improve Care in Acute Renal Disease (PICARD) Study Group

Kidney International (2009)

prospektivní observační studie
618 pacientů



otto *et al. Critical Care* (2016) 20:196
DOI 10.1186/s13054-016-1355-9

RESEARCH Open Access

The Dose Response Multicentre Investigation on Fluid Assessment (DoReMIFA) in critically ill patients

prospektivní observační studie
1734 pacientů

- Pozitivní kumulativní bilance je spojena s nárůstem mortality

COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY

ULTRAFILTRACE

Blood Purification

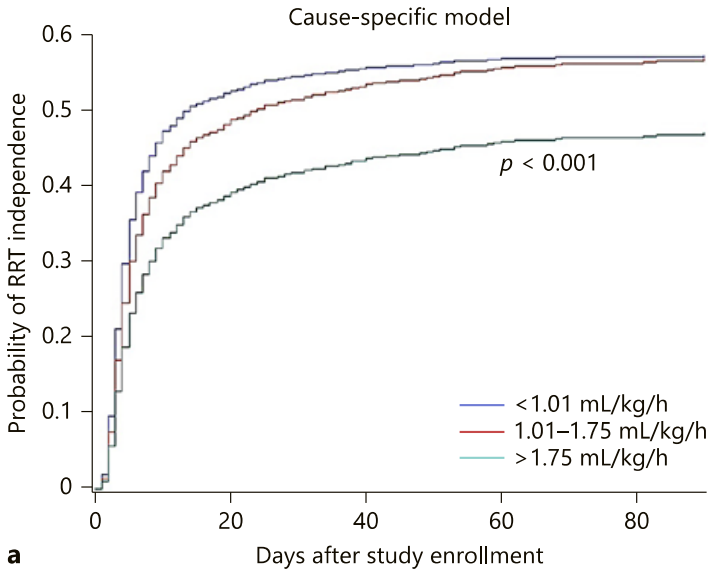
Critical Care Nephrology – Research Article

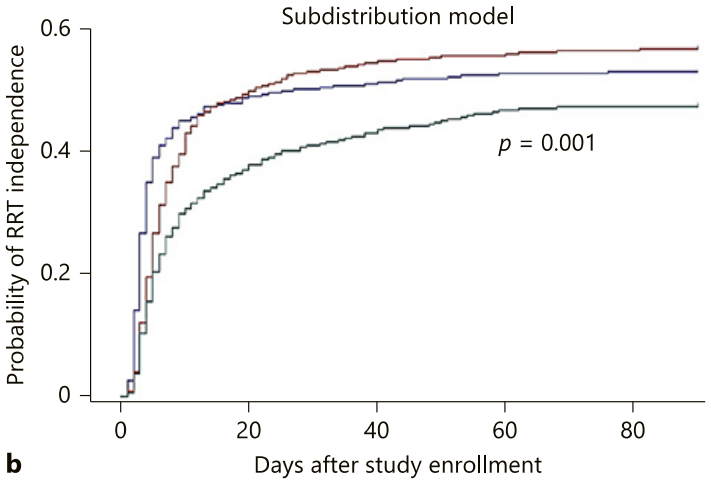
Blood Purif 2022;51:397–409
DOI: 10.1159/000517281

Received: April 21, 2021
Accepted: May 18, 2021
Published online: July 21, 2021

Association between Net Ultrafiltration Rate and Renal Recovery among Critically Ill Adults with Acute Kidney Injury Receiving Continuous Renal Replacement Therapy: An Observational Cohort Study

- 1433 pacientů ze studie RENAL
- Míra UF_{NET} mírné <1,01 ml/kg/h; střední 1,01-1,75 ml/kg/h; vysoké >1,75 ml/kg/h





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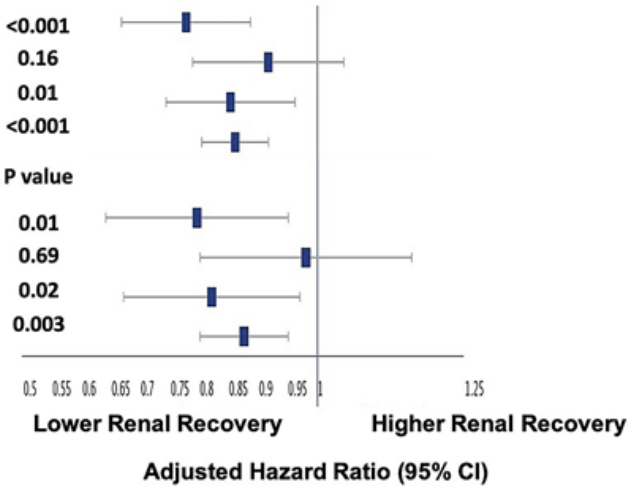
UF_{NET} rate	Renal recovery/No. at risk (%)	Cause-specific Hazard Ratio (95%CI)	P value
>1.75 vs <1.01	228/477 (47.8) vs 253/477 (53.0)	0.69 (0.56 – 0.85)	<0.001
1.01 – 1.75 vs <1.01	274/479 (57.2) vs 253/477 (53.0)	0.87 (0.72 – 1.06)	0.16
>1.75 vs 1.75 – 1.01	228/477 (47.8) vs 274/479 (57.2)	0.79 (0.66 – 0.95)	0.01
1.0 increase	755/1,433 (52.7)	0.81 (0.74 – 0.89)	<0.001
		Sub-distribution Hazard Ratio (95%CI)	P value
>1.75 vs <1.01	-	0.78 (0.64 – 0.95)	0.01
1.01 – 1.75 vs <1.01	-	0.96 (0.80 – 1.16)	0.69
>1.75 vs 1.75 – 1.01	-	0.80 (0.67 – 0.97)	0.02
1.0 increase	-	0.87 (0.80 – 0.95)	0.003



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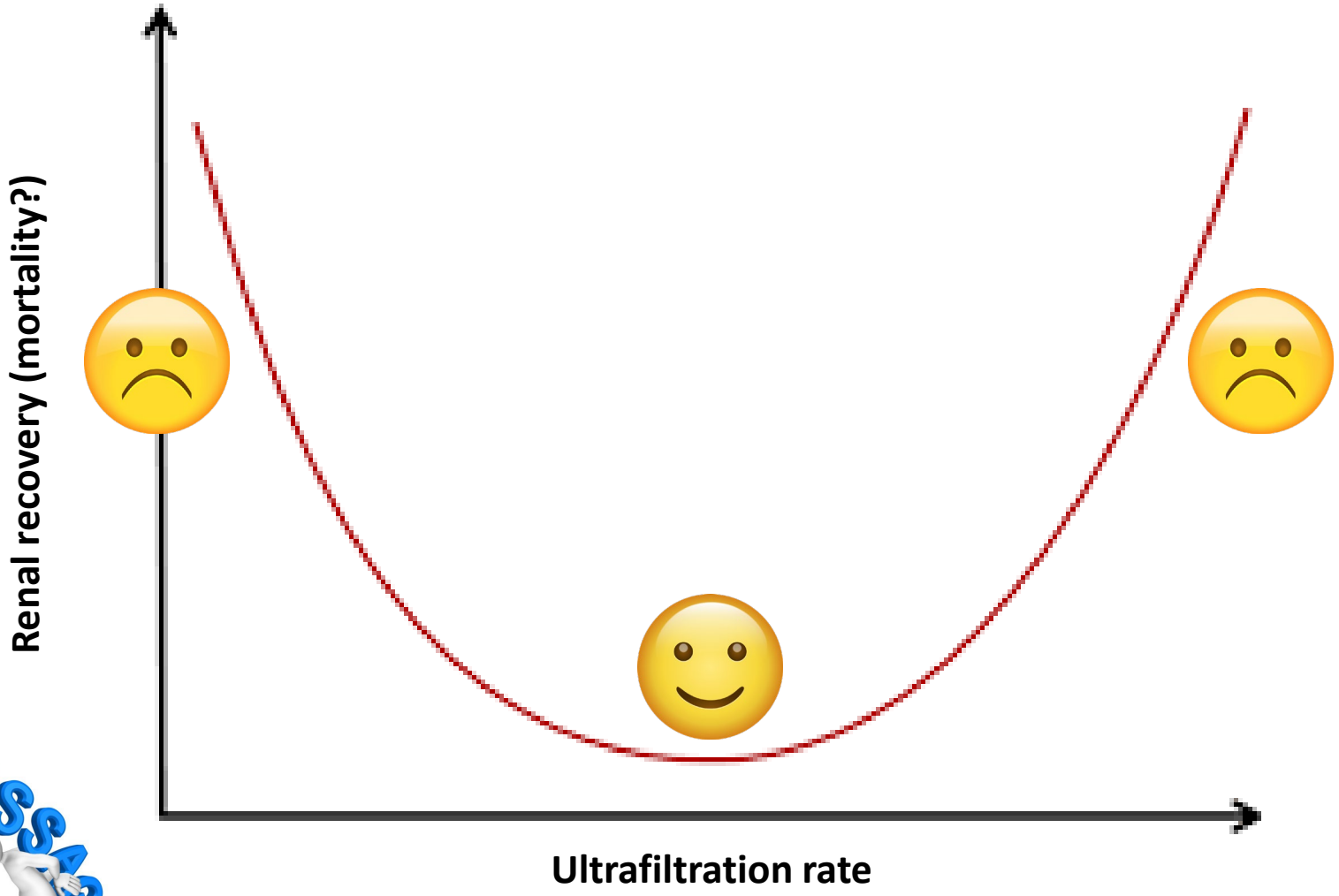
FESTIVAL INTENZIVNÍ MEDICÍNY

ULTRAFILTRACE



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FESTIVAL INTENZIVNÍ MEDICÍNY

HEMADSORPČNÍ METODY

OXFORD

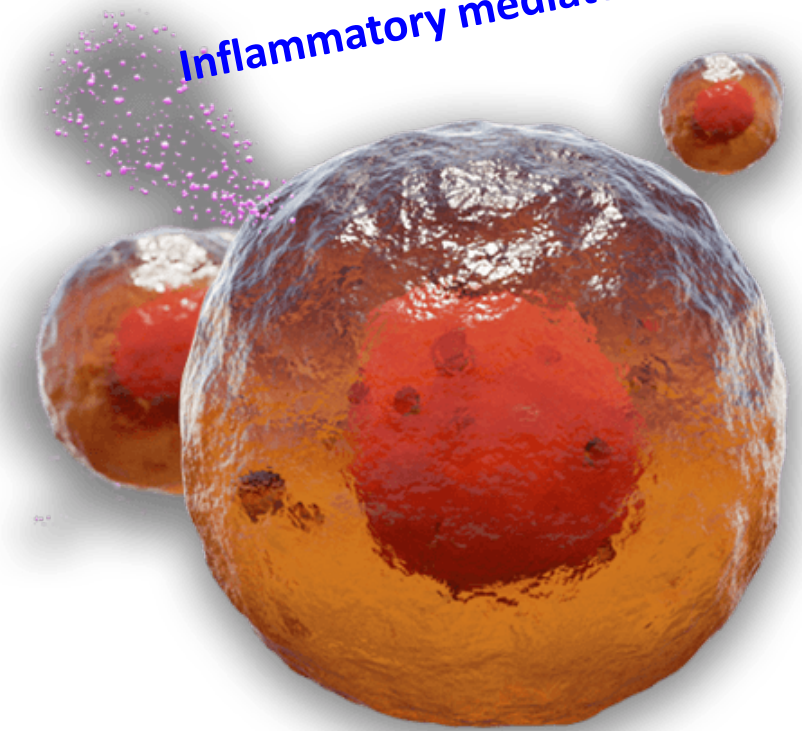
Precision Clinical Medicine, 4(1), 2021, 45–55

doi: 10.1093/pcmedi/pbab005
Advance Access Publication Date: 25 February 2021
Review

REVIEW

Blood purification for sepsis: an overview

Cytokines
Inflammatory mediators



COLOURS OF SEPSIS
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HEMADSORPČNÍ METODY

Scharf et al. Ann. Intensive Care (2021) 11:115
https://doi.org/10.1186/s13613-021-00905-6

RESEARCH Open Access

Can the cytokine adsorber CytoSorb® help to mitigate cytokine storm and reduce mortality in critically ill patients? A propensity score matching analysis

- 143 pacientů
- IL-6 >10 000 pg/ml

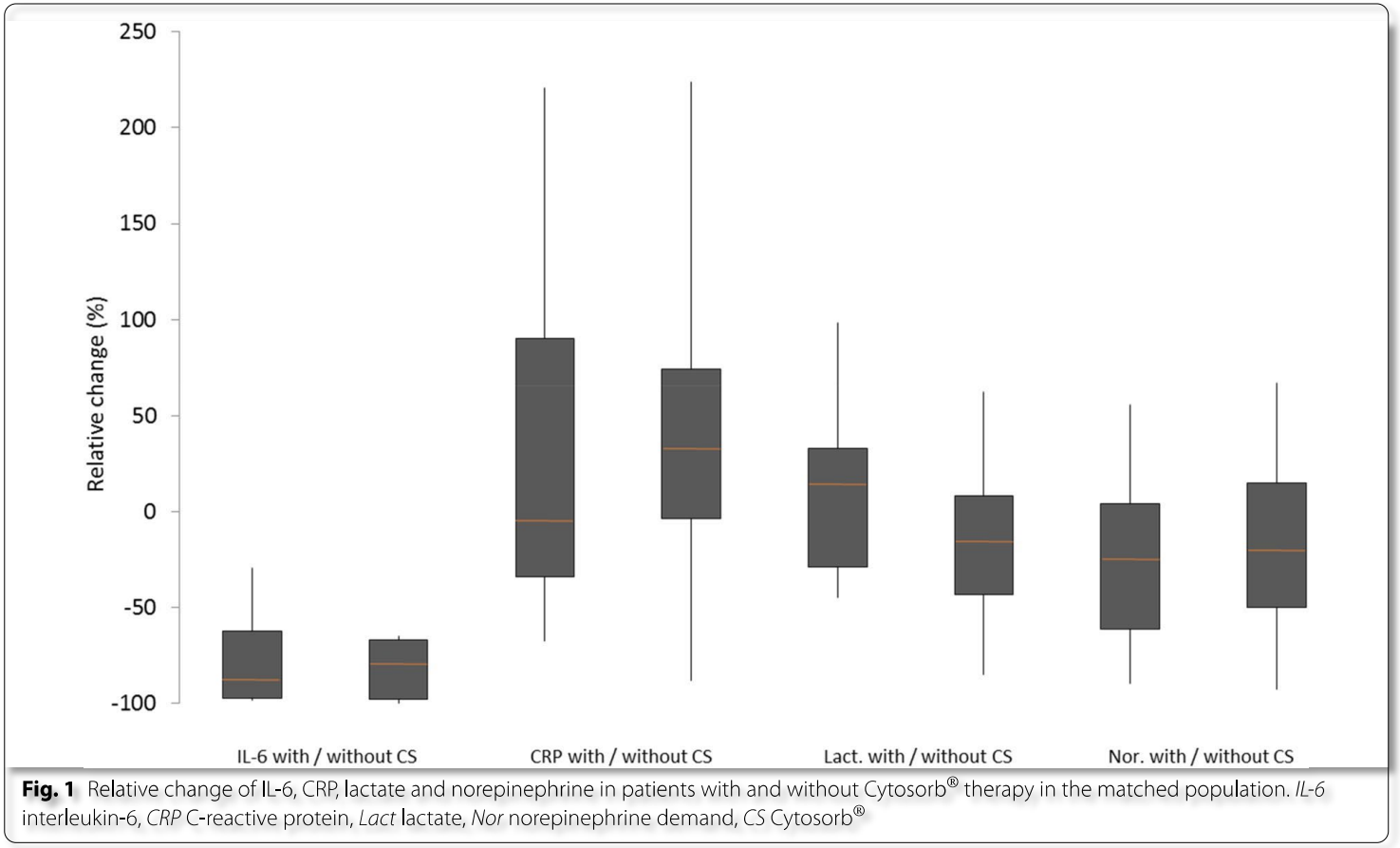

Fig. 1 Relative change of IL-6, CRP, lactate and norepinephrine in patients with and without Cytosorb® therapy in the matched population. *IL-6* interleukin-6, *CRP* C-reactive protein, *Lact* lactate, *Nor* norepinephrine demand, *CS* Cytosorb®

COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY

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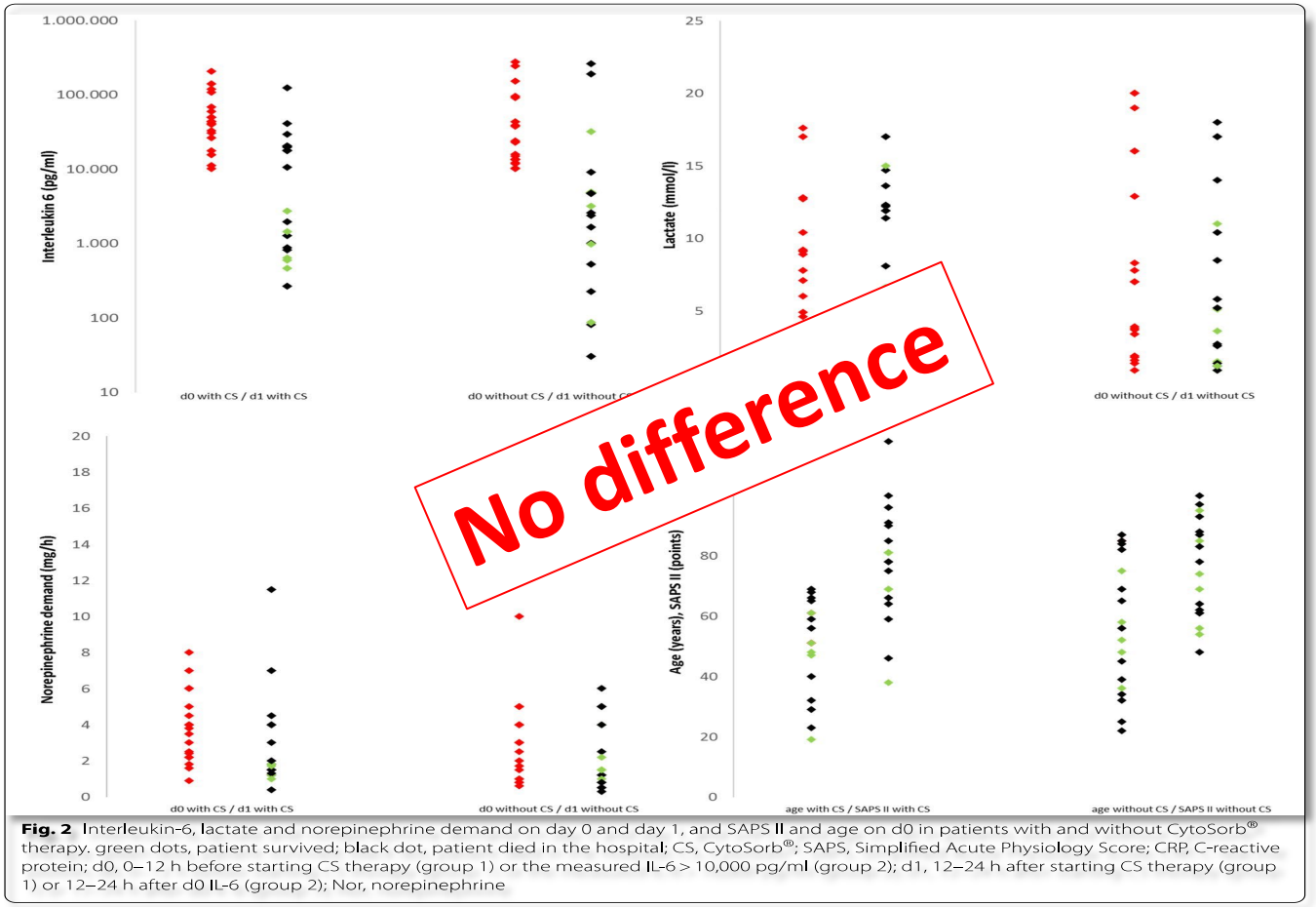

Fig. 2 Interleukin-6, lactate and norepinephrine demand on day 0 and day 1, and SAPS II and age on d0 in patients with and without CytoSorb® therapy. green dots, patient survived; black dot, patient died in the hospital; CS, CytoSorb®; SAPS, Simplified Acute Physiology Score; CRP, C-reactive protein; d0, 0–12 h before starting CS therapy (group 1) or the measured IL-6 > 10,000 pg/ml (group 2); d1, 12–24 h after starting CS therapy (group 1) or 12–24 h after d0 IL-6 (group 2); Nor, norepinephrine

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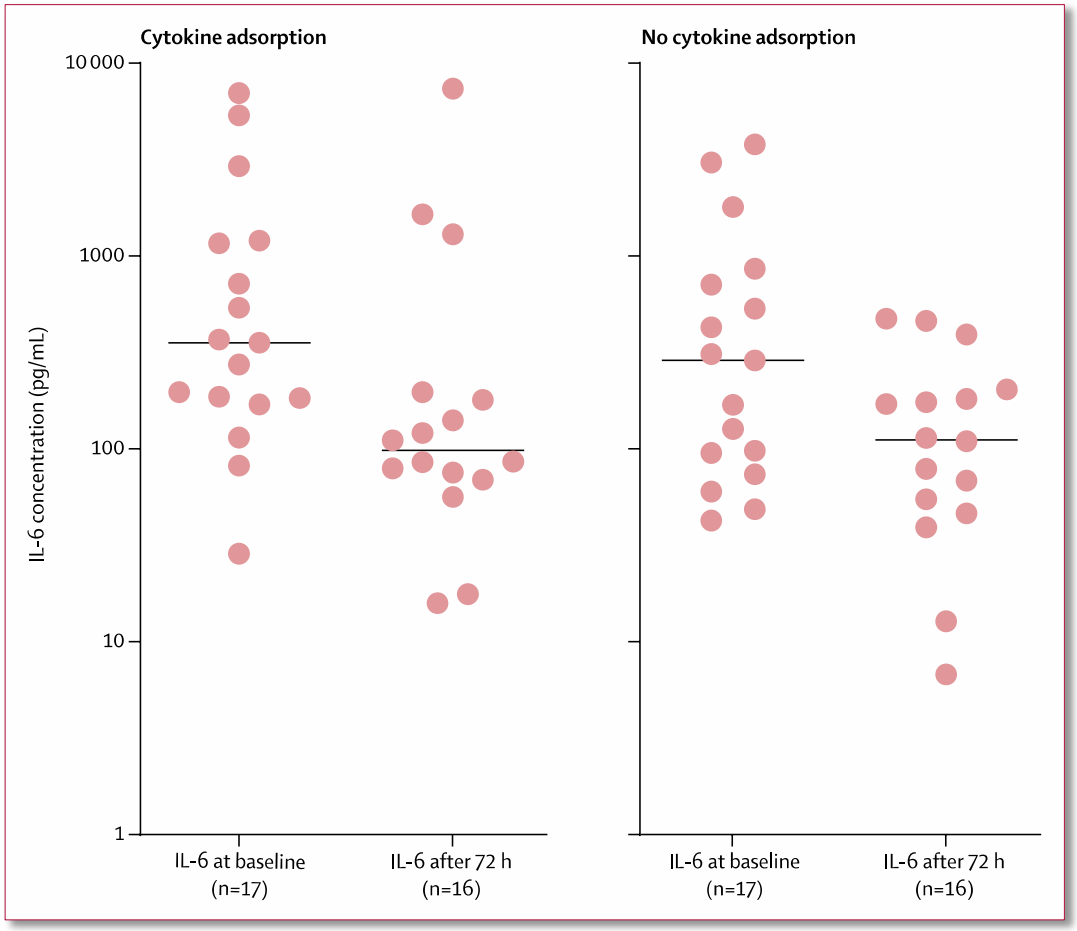
FESTIVAL INTENZIVNÍ MEDICÍNY

HEMADSORPČNÍ METODY

Cytokine adsorption in patients with severe COVID-19 pneumonia requiring extracorporeal membrane oxygenation (CYCOV): a single centre, open-label, randomised, controlled trial

Lancet Respir Med 2021;



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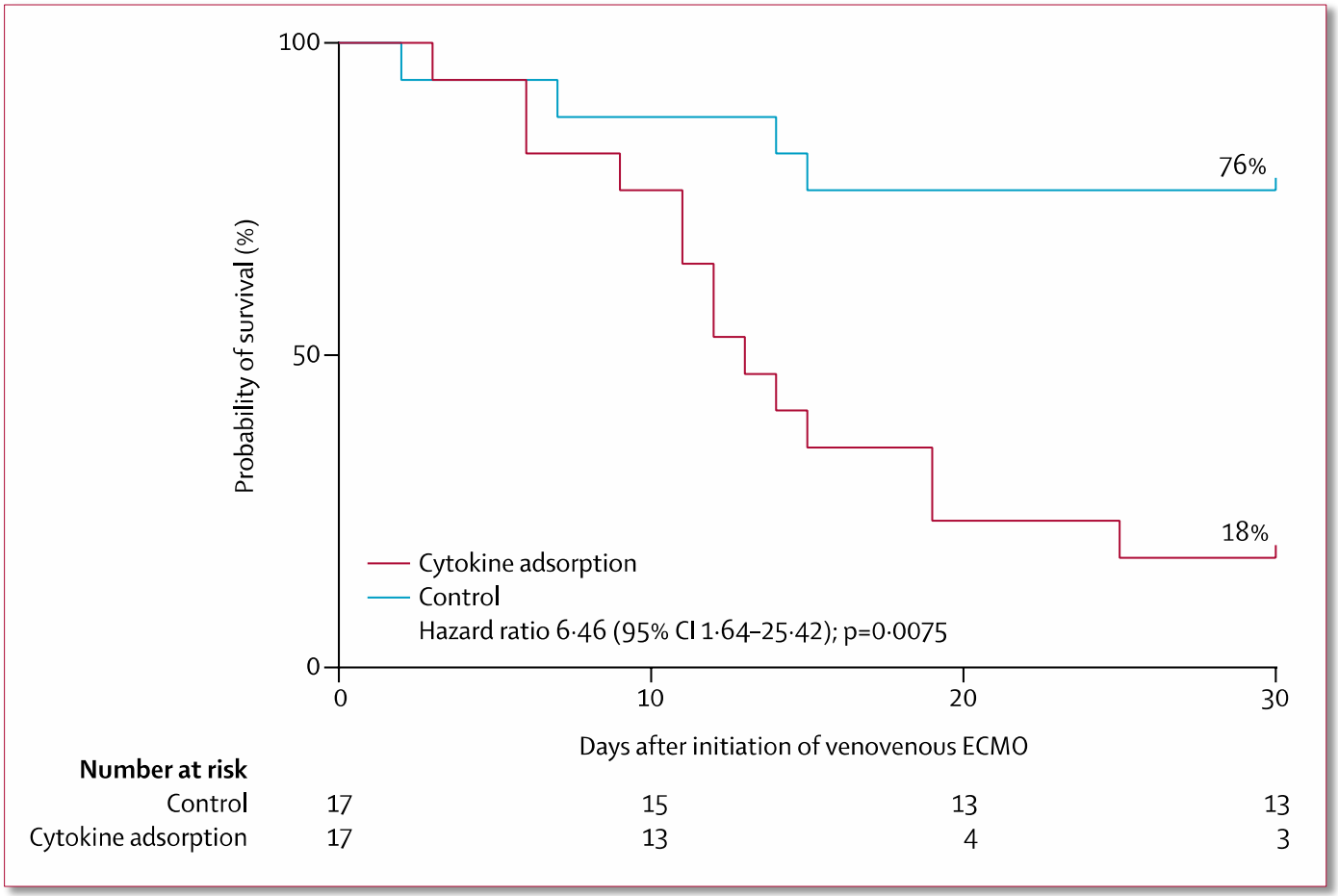

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HEMADSORPČNÍ METODY

Intensive Care Med (2021) 47:1303–1311
https://doi.org/10.1007/s00134-021-06501-3

ORIGINAL

High dose coupled plasma filtration and adsorption in septic shock patients. Results of the COMPACT-2: a multicentre, adaptive, randomised clinical trial

Mortality	Group	N (%)	*p*-value	RR (95%CI)	ARR (95%CI)
3 days	CPFA	19/63 (30.2%)	0.044	2.24 (1.02, 4.91)	16.7 (2.05, 31.34)
	Controls	7/52 (13.5%)			
ICU	CPFA	34/63 (54%)	0.008	1.87 (1.15, 3.04)	25.12 (7.71, 42.53)
	Controls	15/52 (28.8%)			
Hospital	CPFA	35/63 (55.6%)	0.352	1.2 (0.83, 1.74)	9.4 (-8.88, 27.68)
	Controls	24/52 (46.2%)			
90 day follow up	CPFA	36/56 (64.3%)	0.235	1.23 (0.88, 1.72)	12.2 (-6.7, 31.1)
	Controls	25/48 (52.1%)			

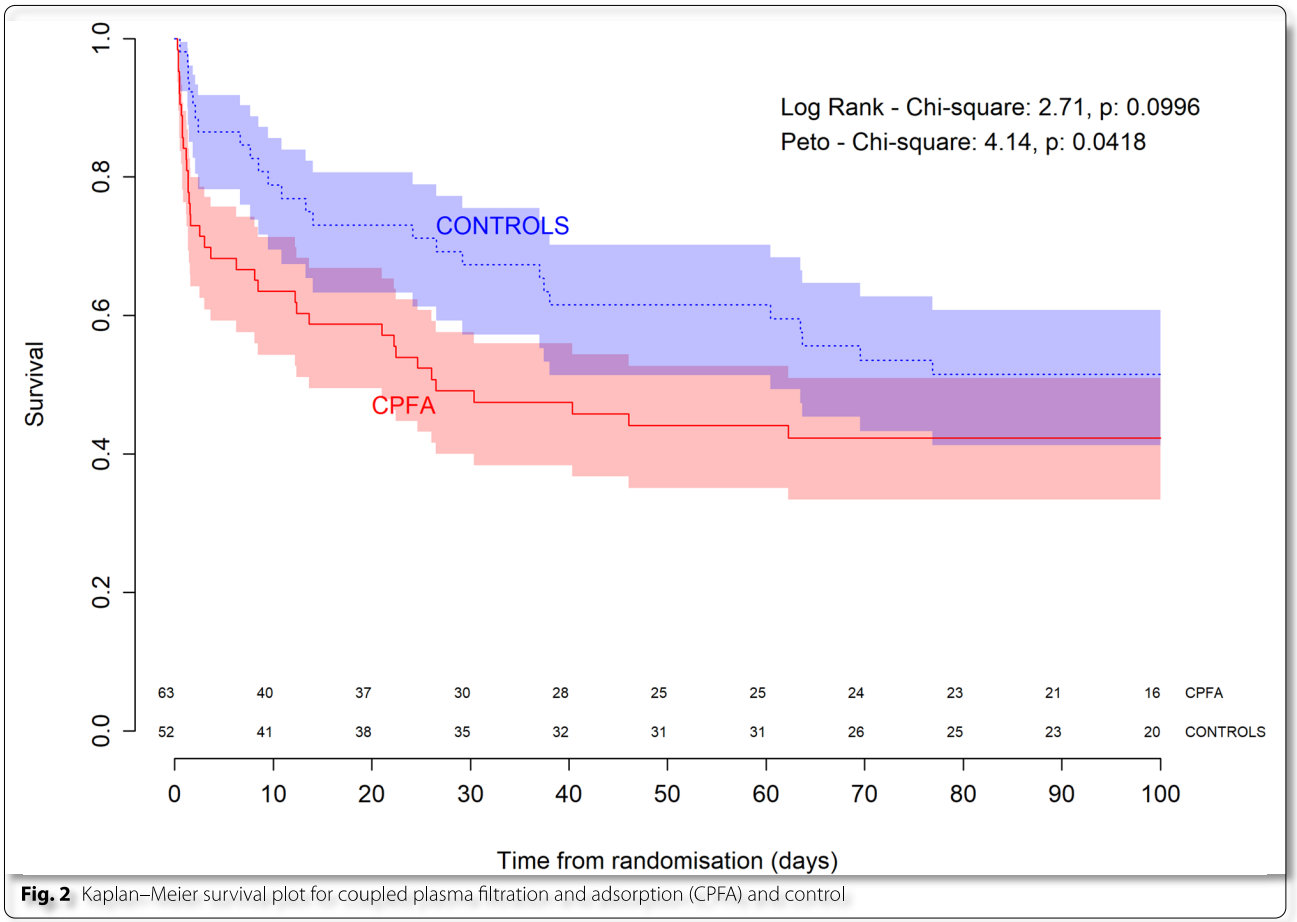

Fig. 2 Kaplan–Meier survival plot for coupled plasma filtration and adsorption (CPFA) and control

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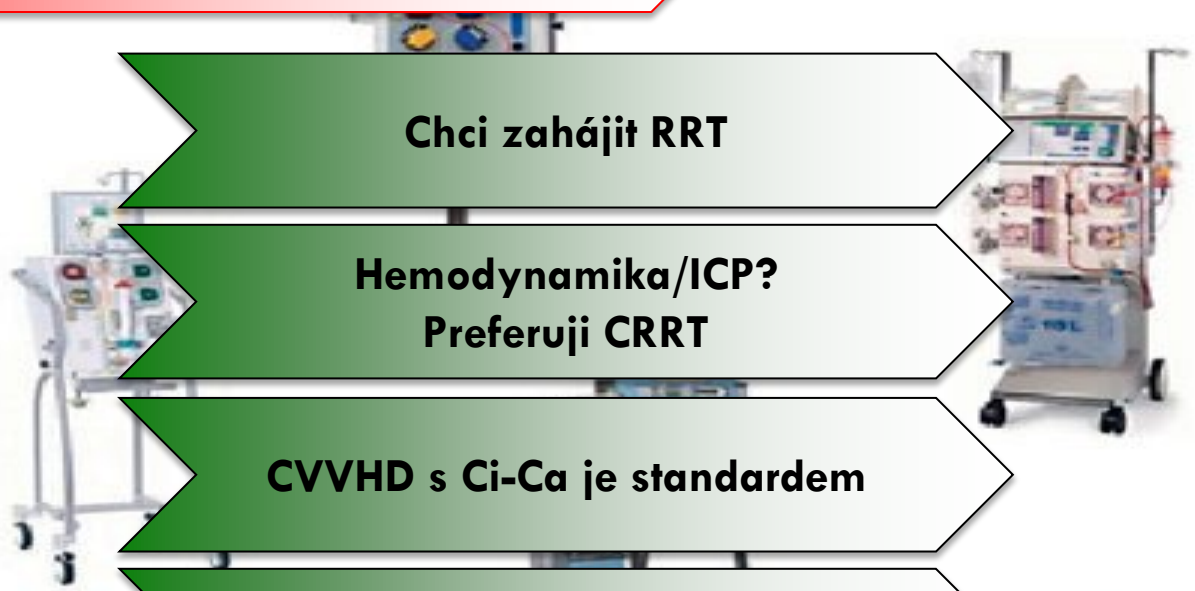
HEMADSORPČNÍ METODY

COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY

7 tipů pro mladé intenzivisty

- Chci zahájit RRT
- Hemodynamika/ICP?
  Preferuji CRRT
- CVVHD s Ci-Ca je standardem
- Dávka 20-25 ml/kg/h
- Standardní hemofiltr
  1,2-1,8 m^2
- UF dle trajektorie pacienta
  (optimálně 1-1,75 ml/kg/h)
- Nastavení citrátu 4 mmol/l
  Nastavení kalcia 1,7 mmol/l



COLOURS OF SEPSIS
FESTIVAL INTENZIVNÍ MEDICÍNY


ZA VAŠI POZORNOST
JÁ DĚKUJI