REUNION REGIONALE DE THERAPEUTIQUE EN REANIMATION-AMIENS 2005

Hémodialyse en réanimation : données récentes sur les modalités pratiques chez le patient grave

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Créteil

Prognosis of ARF needing RRT in the ICU

	n	Period	Mortality	SAPS II	CRRT
F. Brivet *Crit Care Med*	174	91	64 %	42 points	16 %
C. Guerin *Intensive Care Med*	587	96-97	71 %	60 points	60 %
Best Kidney *JAMA*	1258	2001	62%	48 points	80%

Influence of dialysis membranes on outcomes in acute renal failure: A meta-analysis

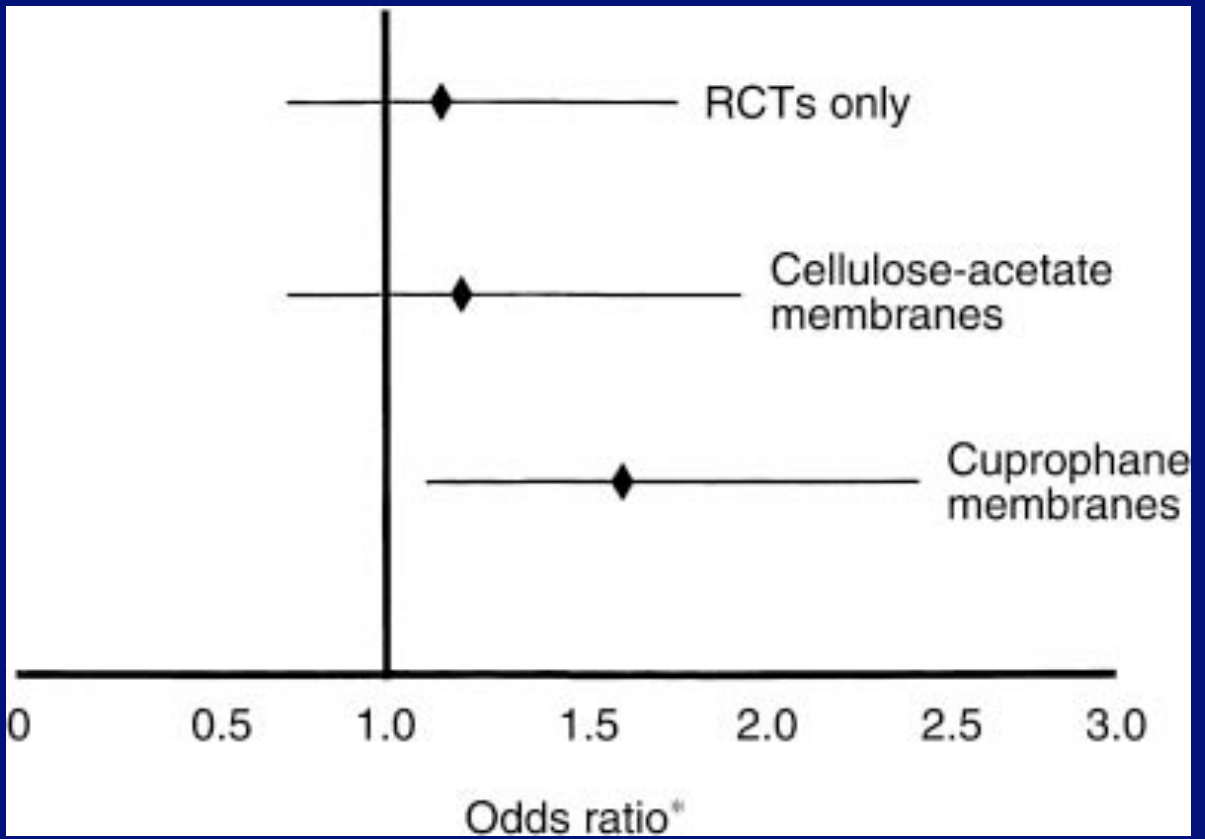
Subramanian et al. Kidney International 2002

Biocompatibilité

Synthétique

Cellulose modifiée

Cuprophane



n=423

n=438

Optimisation hémodynamique

- Préserver le volume plasmatique
- Préserver la contractilité myocardique
- Préserver la réactivité vasculaire

The New England Journal of Medicine

Volume 346:305-310 January 31, 2002

Daily Hemodialysis and the Outcome of Acute Renal Failure

Helmut Schiffl, M.D., Susanne M. Lang, M.D., and Rainald Fischer, M.D.

Perte de poids 1 L/h

Perte de poids 0.4 L/h

TABLE 3. OUTCOMES ACCORD TO TREATMI GROUP.*

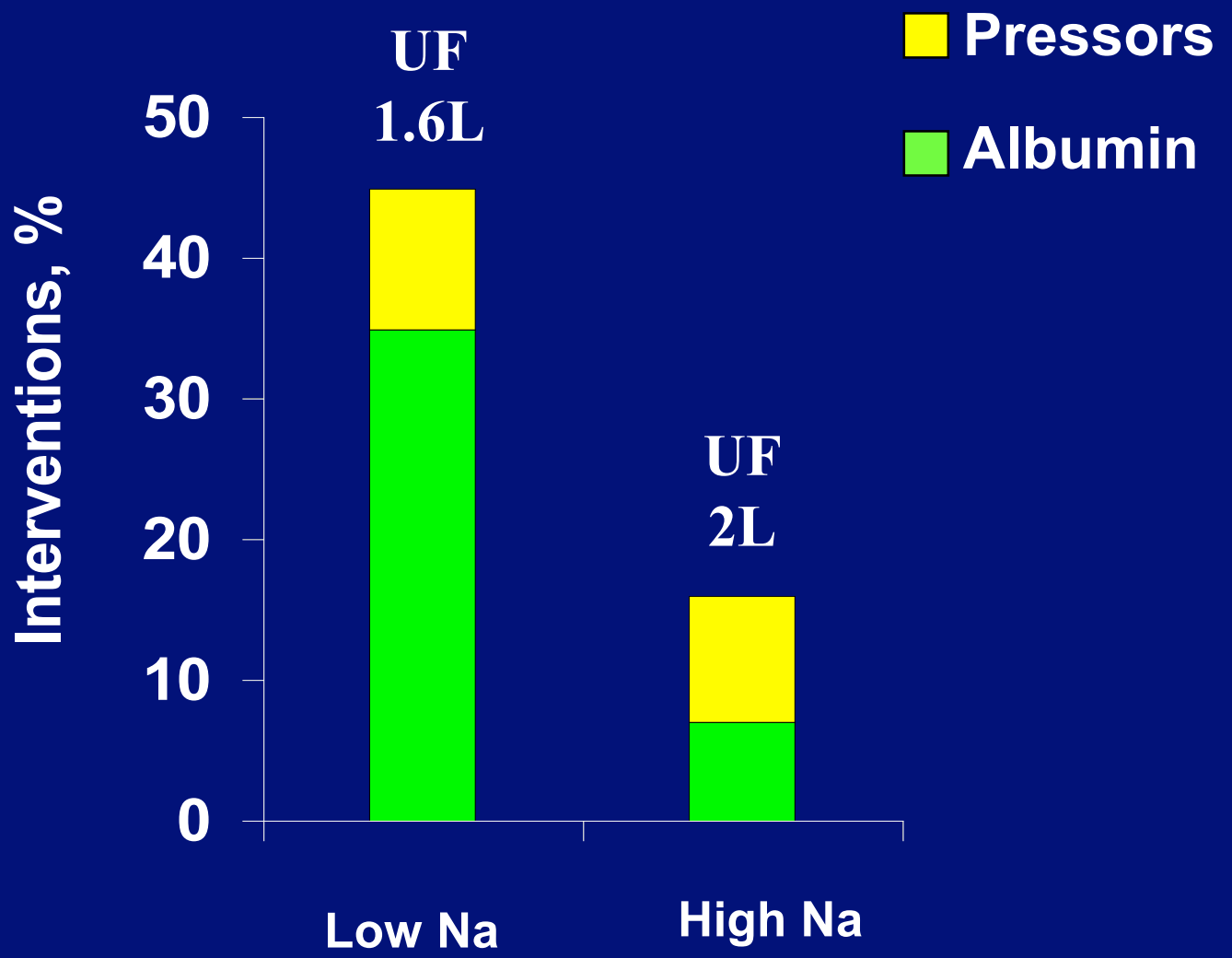
	ALTERNATE-DAY HEMODIALYSIS (N=80)	DAILY HEMODIALYSIS (N=80)	P VALUE
Mortality — no. (%)†	37 (46)	22 (28)	0.01
Resolution of acute renal failure — days	16±6	9±2	0.001

*Plus–minus values are means ±SD

†Mortality was calculated accor ent

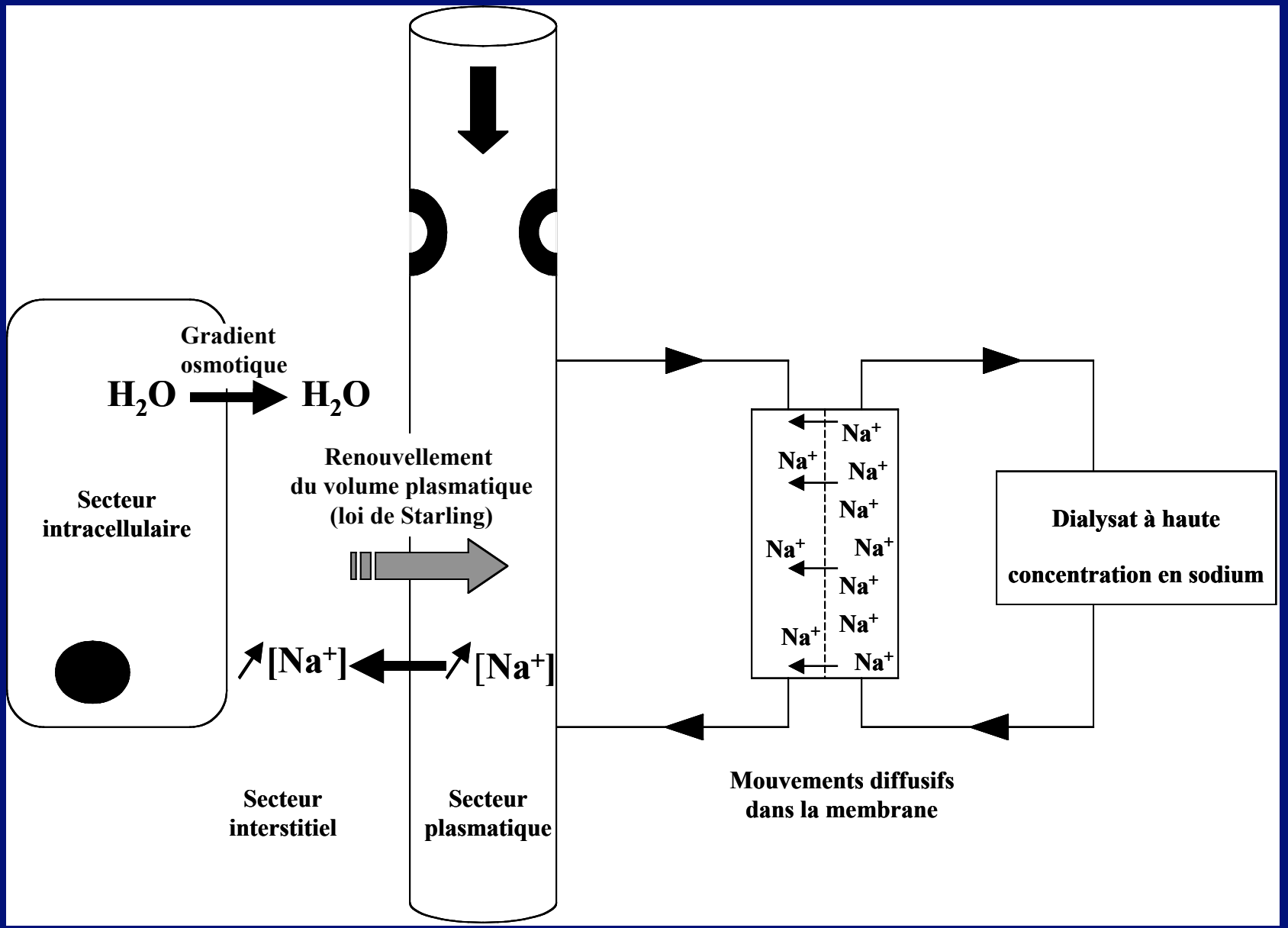
HypoTA 25%

HypoTA 5%



Paganini et al. Nephrol Dial Transplant, 199

Renouvellement du volume plasmatique



145-150 mmol/L

Preserver la contractilité myocardique

1. Concentration en Calcium du dialysat:

- Concentration élevée 1.75 mmol/l vs basse 1.25 mmol/l

  [van der Sand *Am j Kidney Dis* 1998]

2. Choix de la solution tampon:

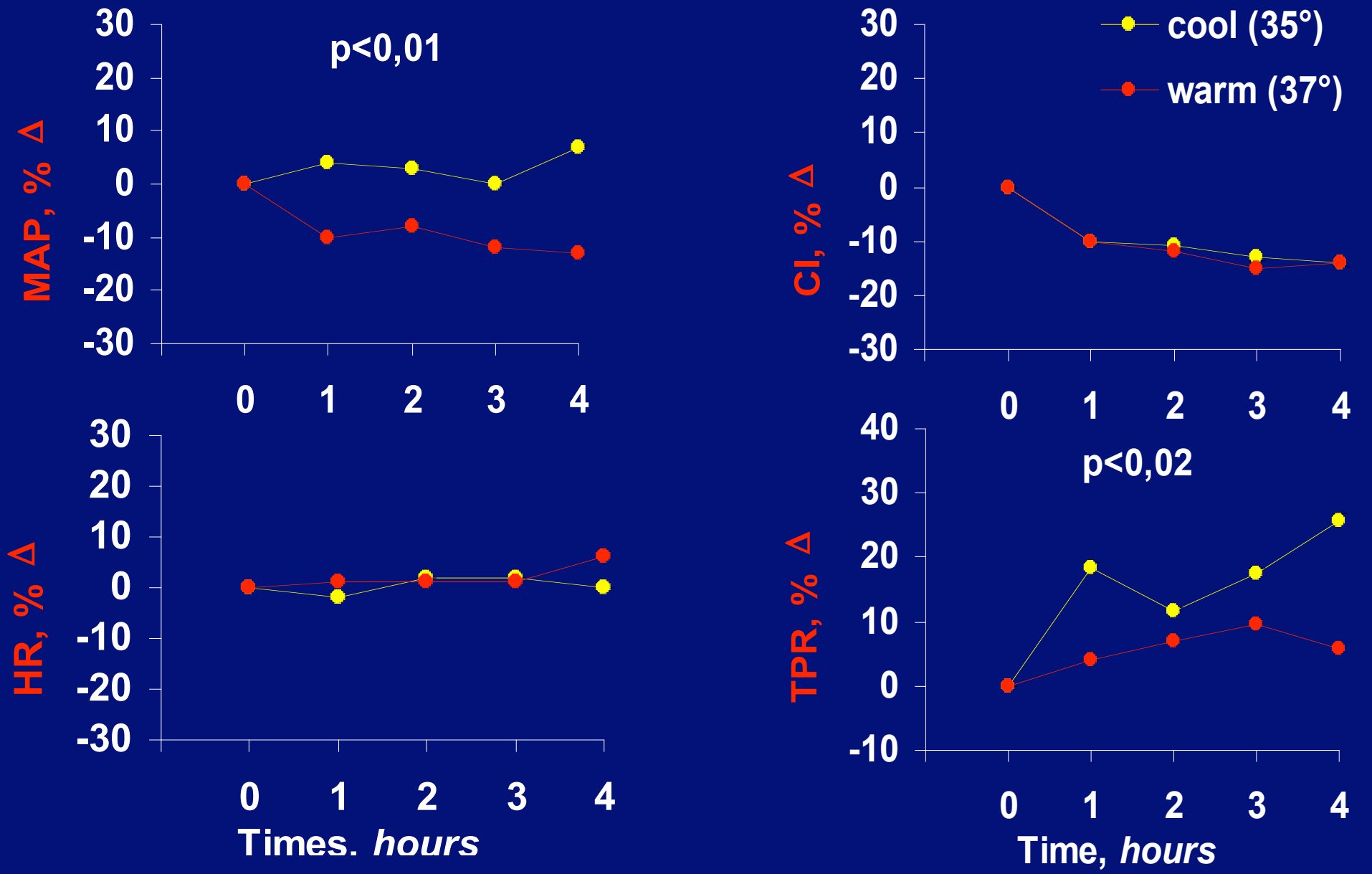
- Dialysat au bicarbonate vs. acétate

  [JL Vincent *Kidney* 1982]

- Place de l'acetate free biofiltration ?

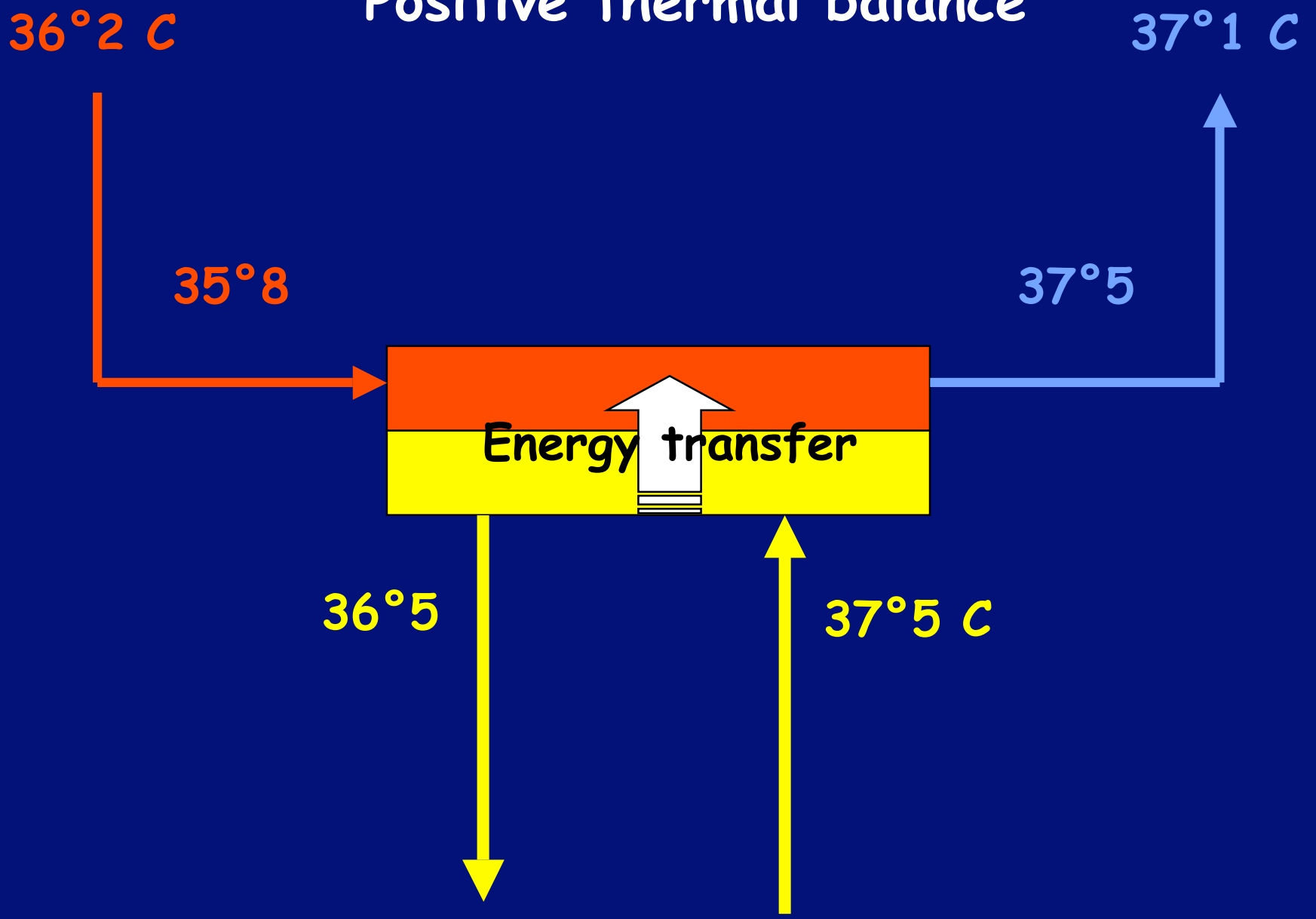
Température

et réactivité vasculaire

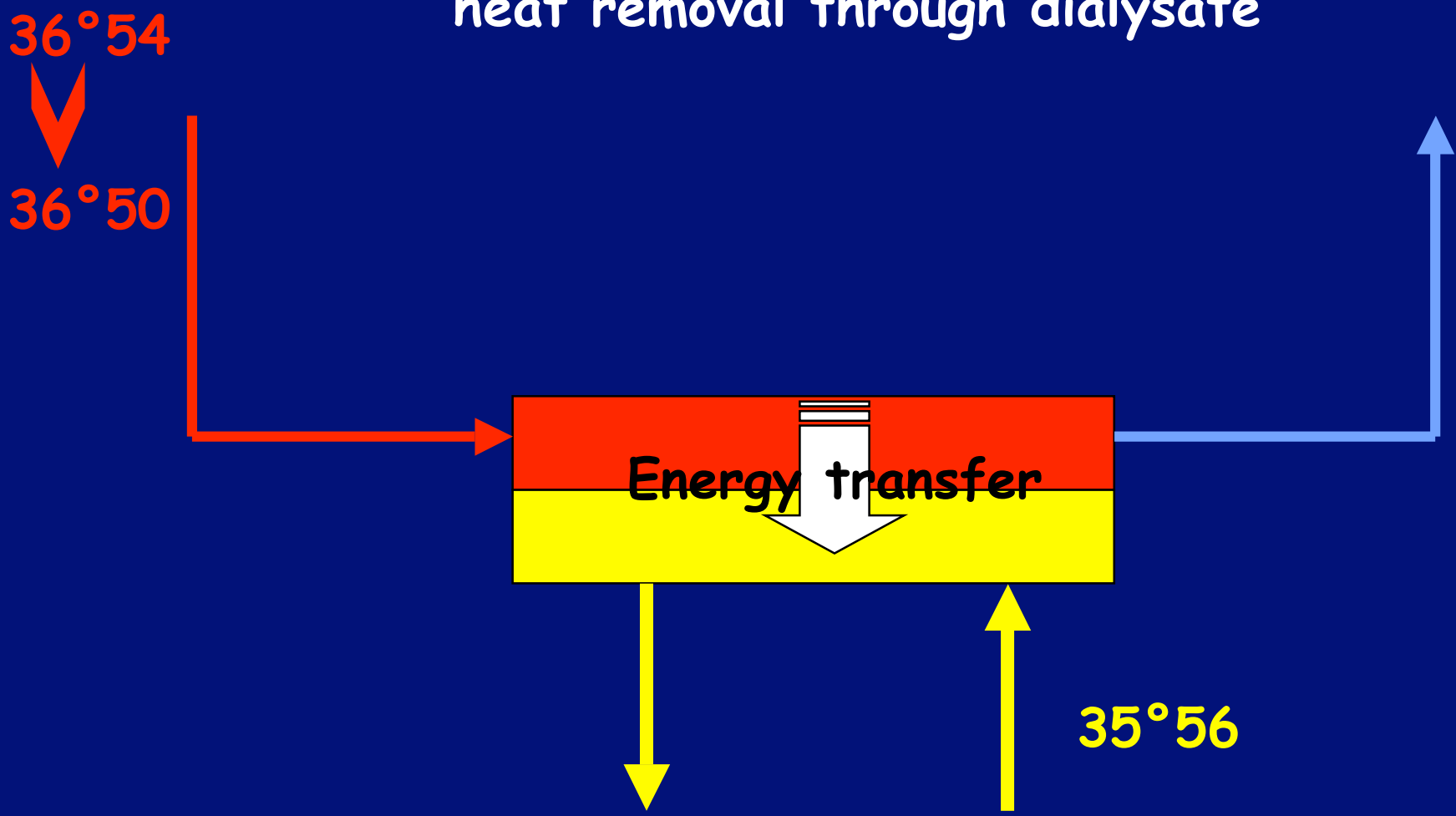


Yu, Kidney 1995

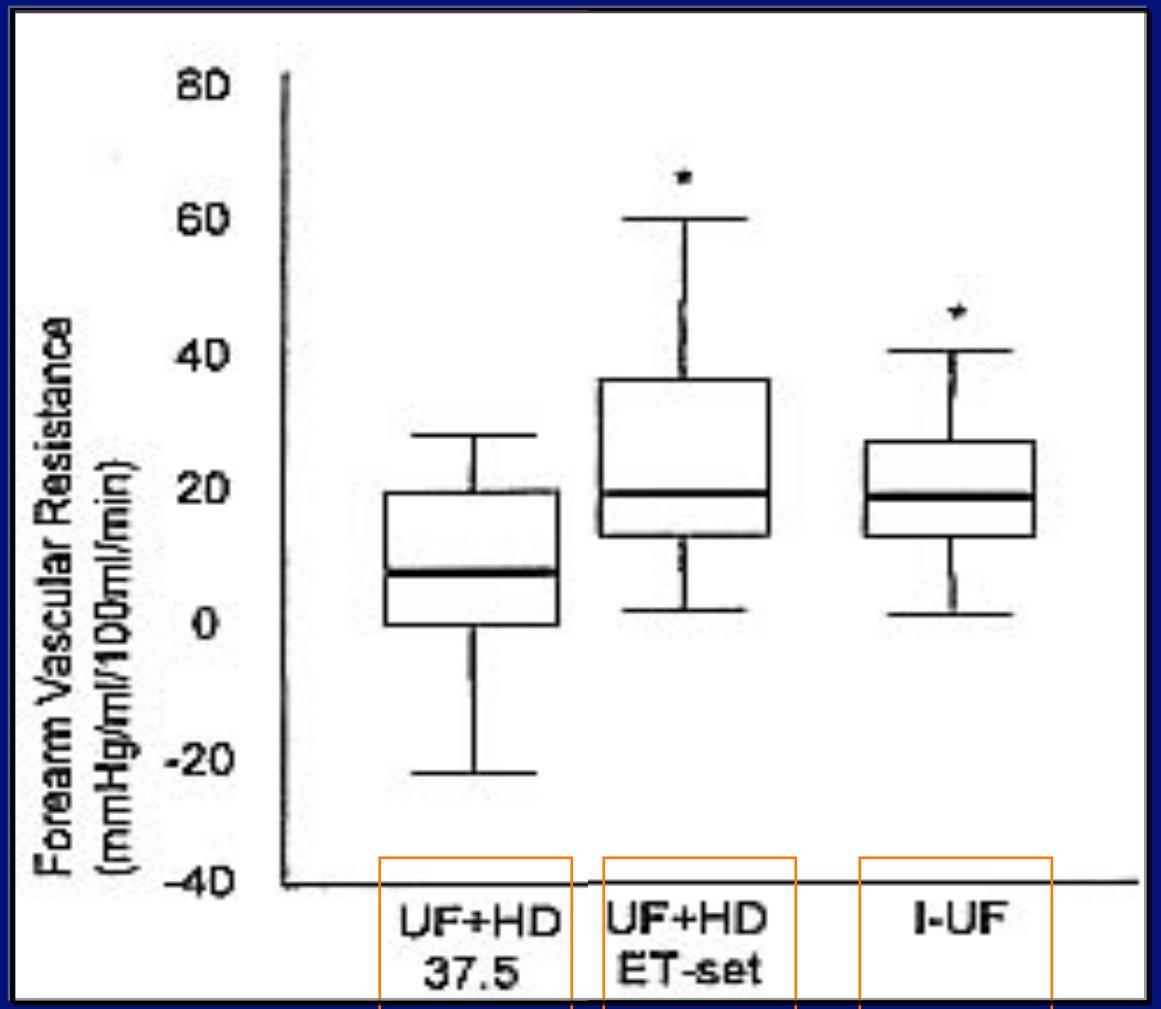
Positive thermal balance



Isothermic hemodialysis=stable thermal balance
heat removal through dialysate



Rosales *Am J Kidney Dis*, 2000



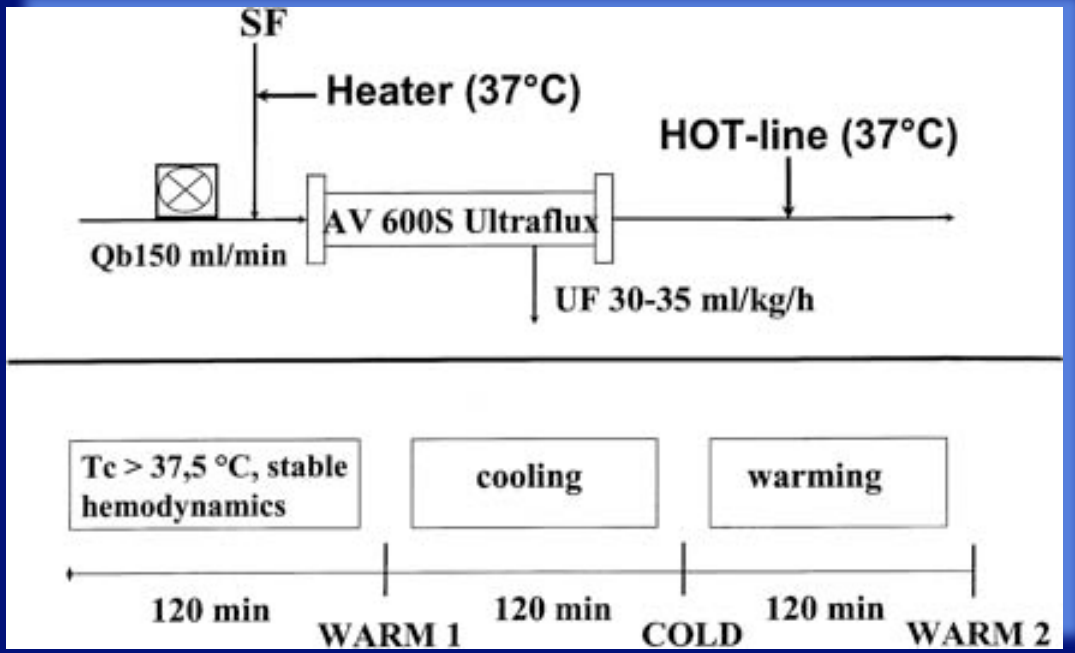
	UF+HD 37.5	UF+HD ET-set	I-UF
Δ θ ° corporelle	+0.2°	-0.4°	-0.4°

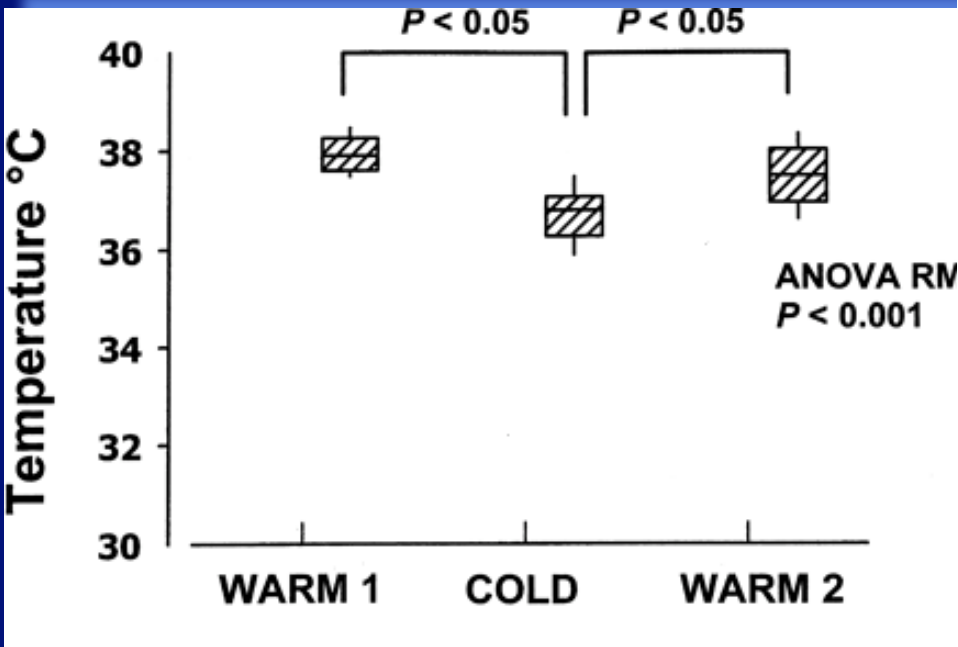
van der Sand et al. Am J kidney Dis, 2000

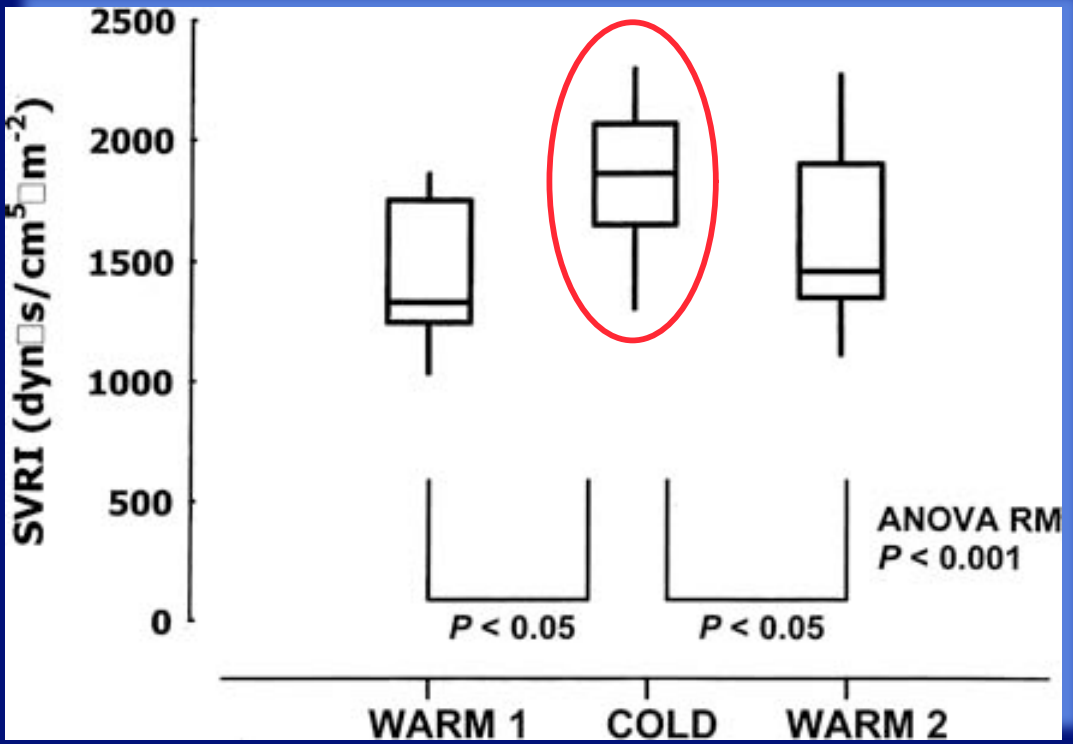
Nephrology Dialysis Transplantation

Effects of continuous venovenous haemofiltration-induced cooling on global haemodynamics, splanchnic oxygen and energy balance in critically ill patients

Richard Rokyta, 2004

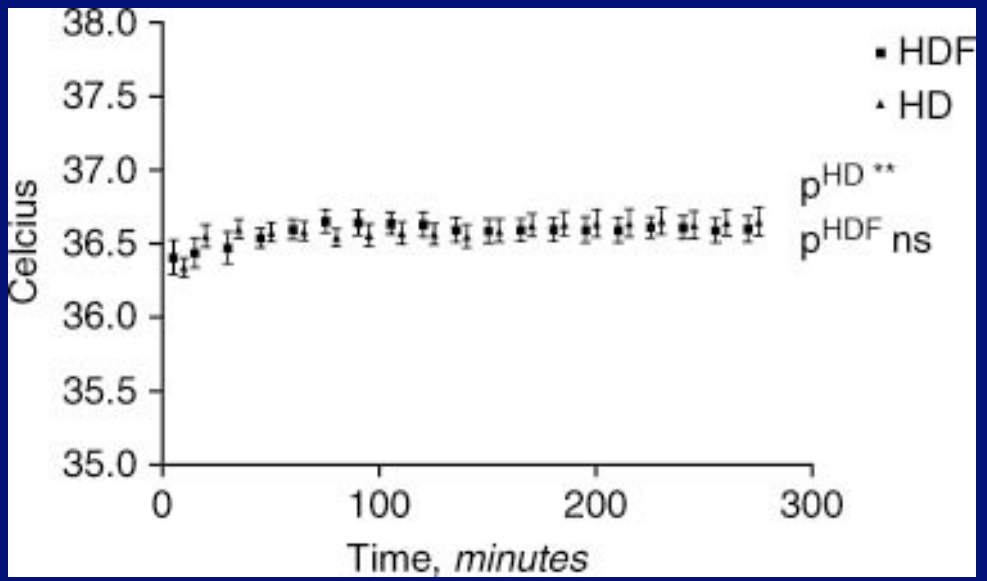




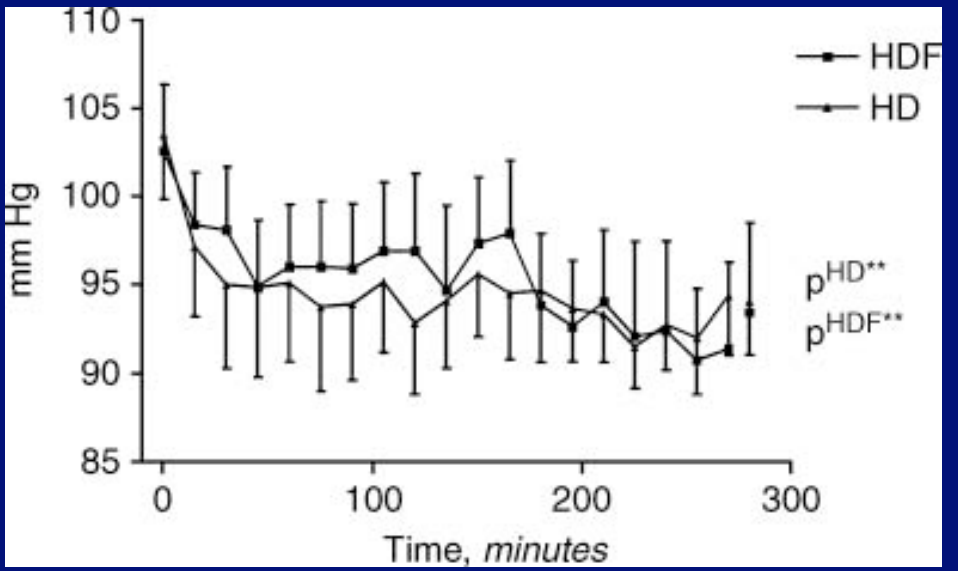


	WARM 1	COLD	WARM 2 P	
Heart rate (b.p.m.)	91 (75, 100)	78 (66, 91)*	83 (70, 93)**	<0.005
MAP (mmHg)	85 (84, 87)	91 (87, 98)*	86 (82, 95)**	<0.05
PAOP (mmHg)	15 (14, 18)	18 (17, 19)	17 (16, 18) NS	
CI (l/min/m2)	4.15 (3.45, 4.80)	3.70 (2.75, 4.13)*	4.10 (3.15, 4.63)**	<0.005

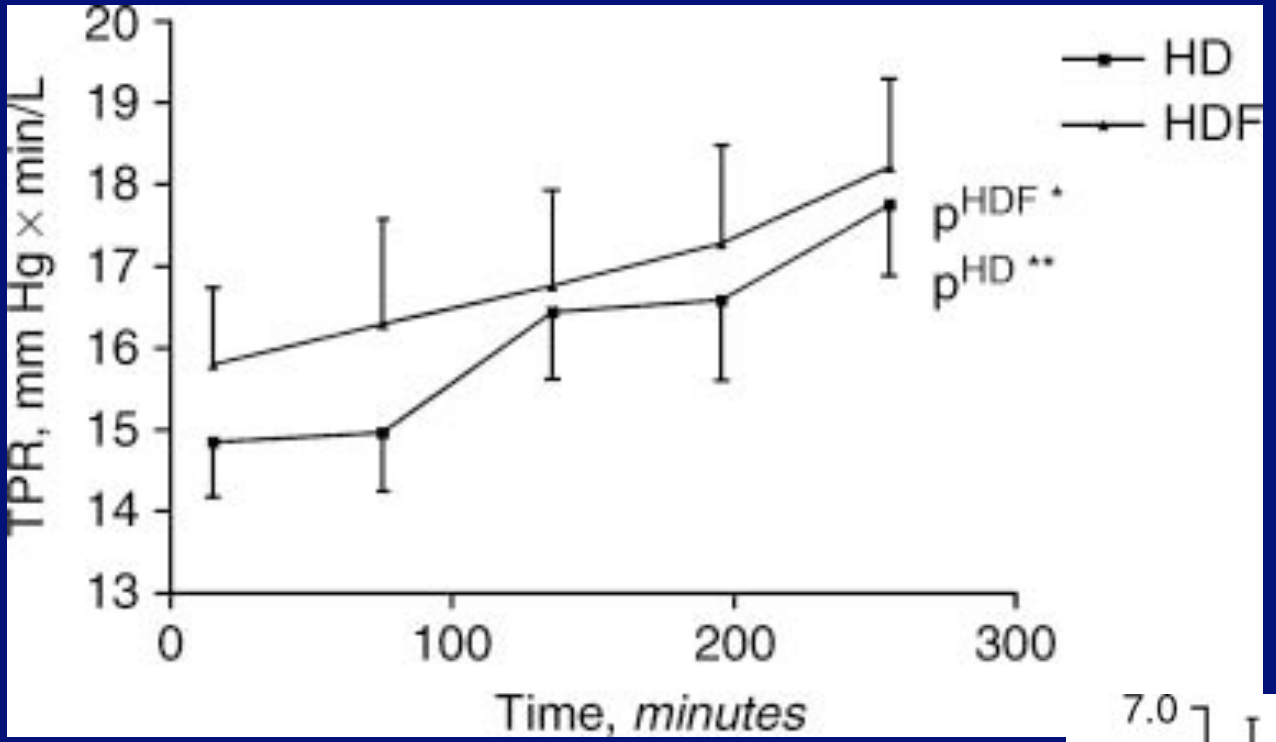
Predilution hemodiafiltration displays no hemodynamic advantage over low-flux hemodialysis under matched conditions.
Karamperis, Nikolaos, Sloth, Erik & Jensen, Jens Dam
***Kidney International* 2005 67 (4), 1601-1608.**



Body temperature

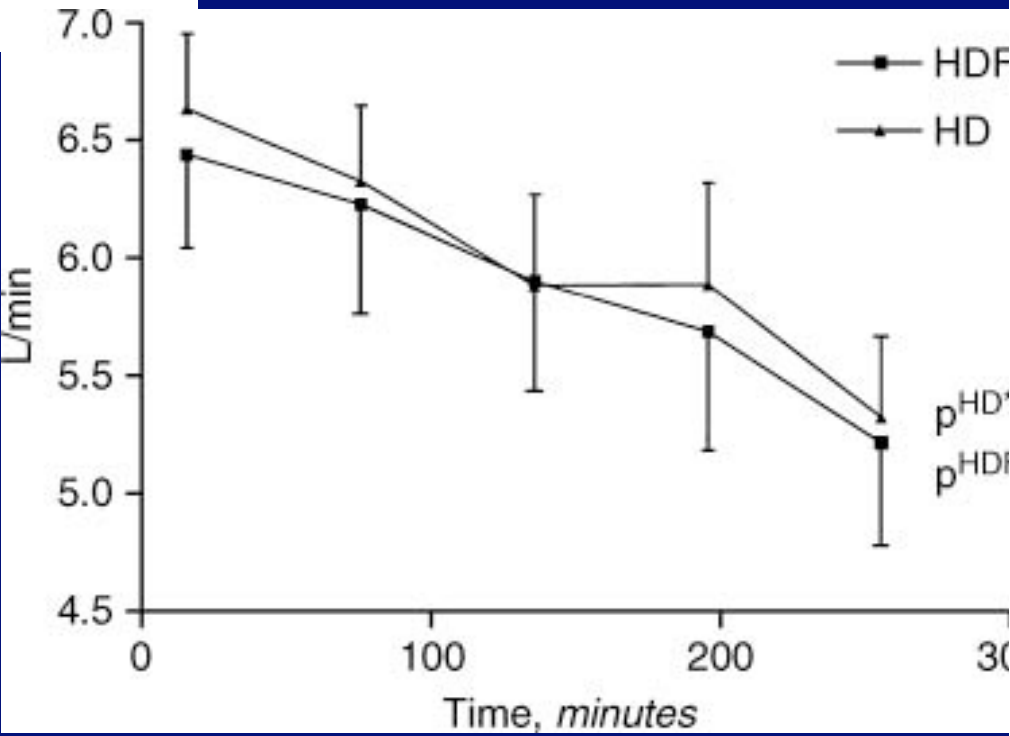


MAP



Resistances

CO



Optimisation de la dose de dialyse en hémodialyse

=

Épuration de l'urée

Clairance instantanée de l'urée

Hémodialyse: 200-300 ml/mn

Hémofiltration: 20-30 ml/mn

Hémofiltration à haut volume: 100-130 ml/mn

- 5 h d'HD = 50 h d'HF =10 h d'HFHV

Paramètres déterminant la dose de dialyse délivrée

Clairance de l'urée

HDI: Débit sang

Débit dialysat

Membrane:

- Structure
- Surface (dont coagulation)

Recirculation de la voie d'abord vasculaire

Durée de la séance

Clairance de l 'urée pour une même surface de 2,10 m²

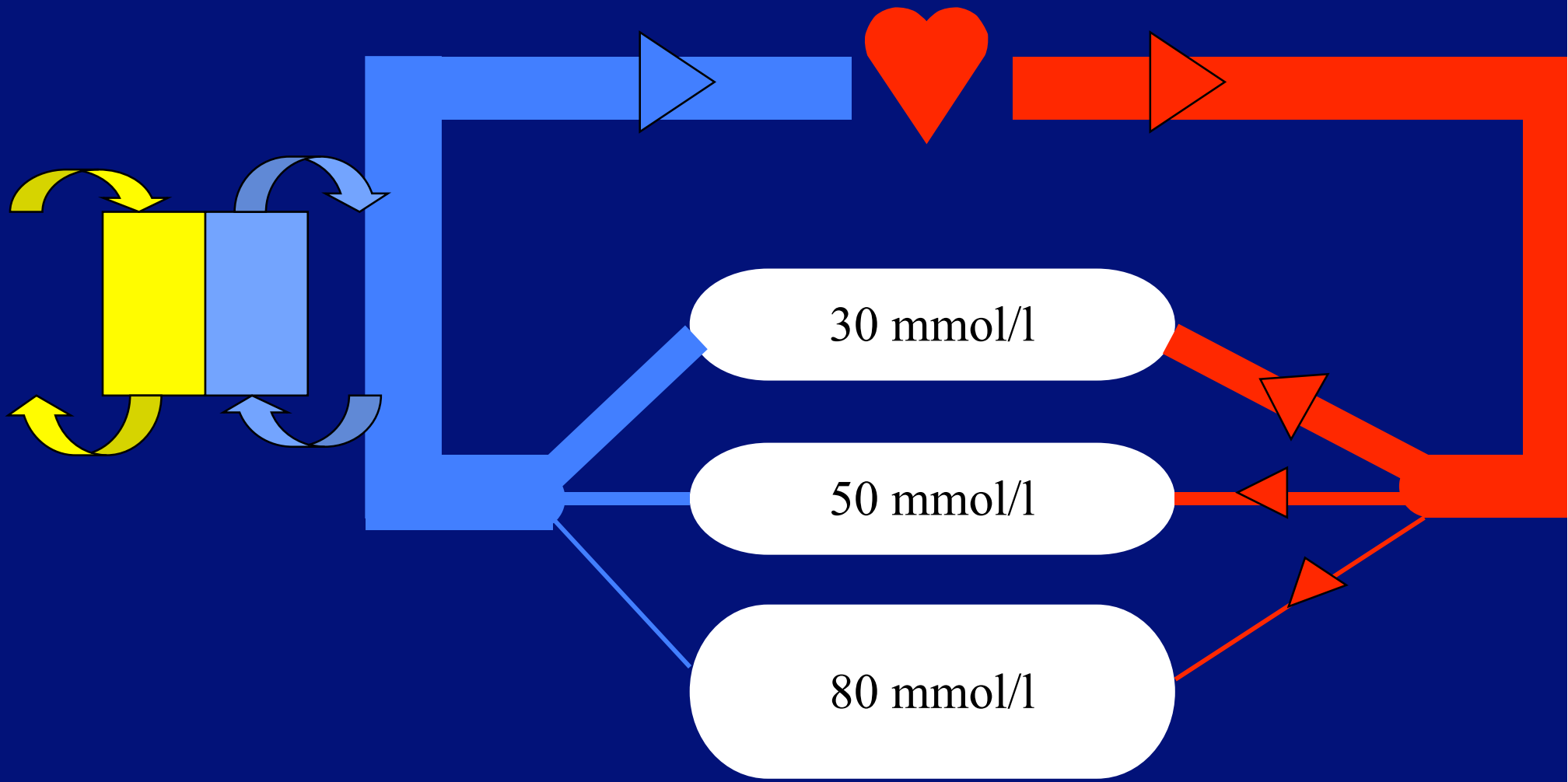
Cellulosiques

Acétate	198 ml/min
Diacétate	268 ml/min
Triacétate	287 ml/min

Synthétiques

AN69	265 ml/min
Polyamide	290 ml/min

Qsg=300 ml/min Qd=500ml/m


30 mmol/l
50 mmol/l
80 mmol/l

Dose de dialyse délivrée: objectifs

HDI: Taux de réduction de l 'urée

$$\frac{Cpré - Cpost}{Cpré} \times 100 \geq 50\%$$

Clairance de l 'urée en L/mn

Temps de la dialyse en min

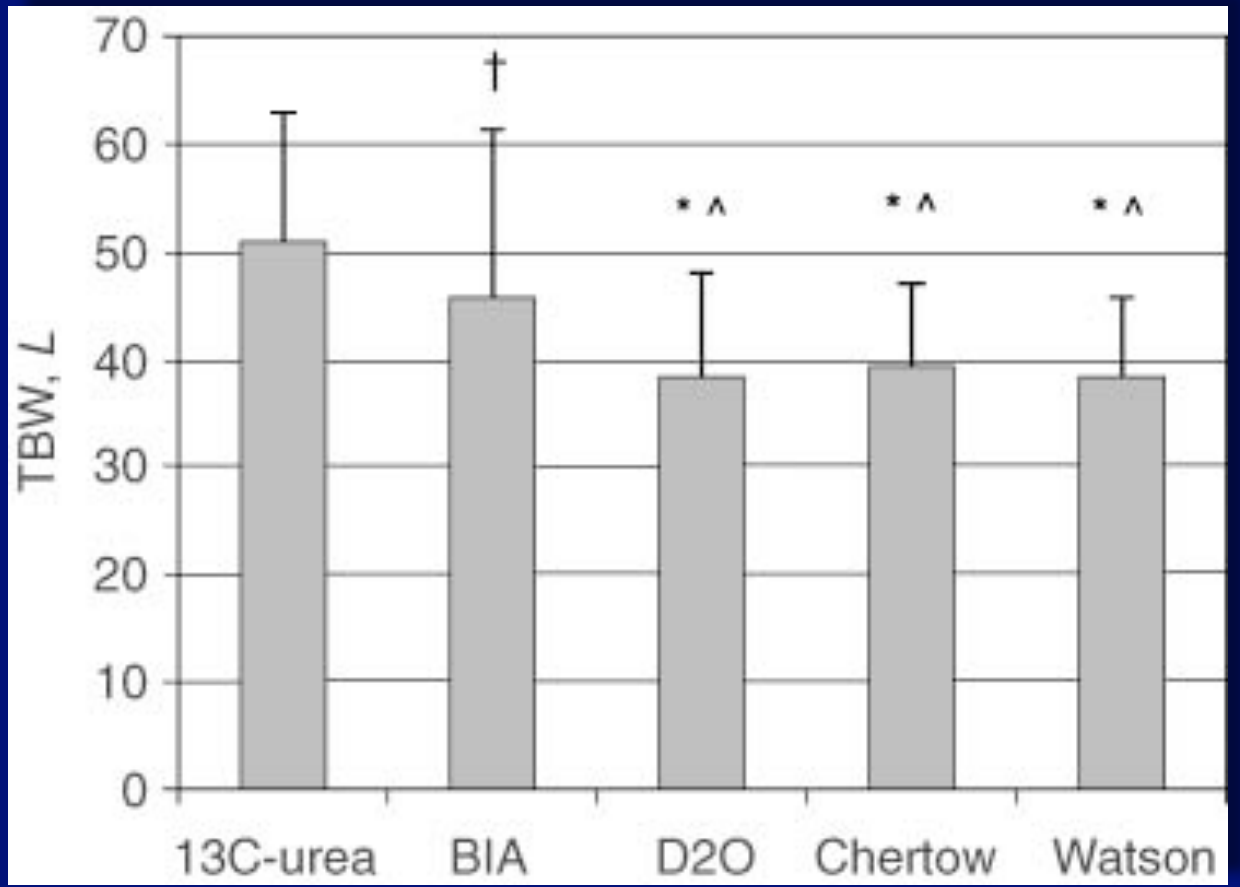
$$\frac{K.t}{V} \geq 1.2$$

Volume de distribution de l 'urée en L

Kidney International
Volume 65 Issue 2 Page 725 - February 2004

Urea space and total body water measurements by stable isotopes in patients with acute renal failure

T. Alp Ikizler et al.



Deuterium oxide (D2O)
Bioelectrical impedance (BIA)
Chertow: anthropometric
Watson: anthropometric

Dose de dialyse prescrite

Clairance de l'urée du dialyseur: 200 ml/min

Temps de dialyse: 4 heures

Homme de 70 Kg

Volume épuré

$$\frac{K.t}{V} = \frac{200x240}{42} = \frac{48\ l}{42\ l} = 1{,}14$$

Volume à épurer

Temps de dialyse MINIMAL à prescrire

Clairance de l'urée du dialyseur: 175 ml/min

Triacétate 2.10 m²

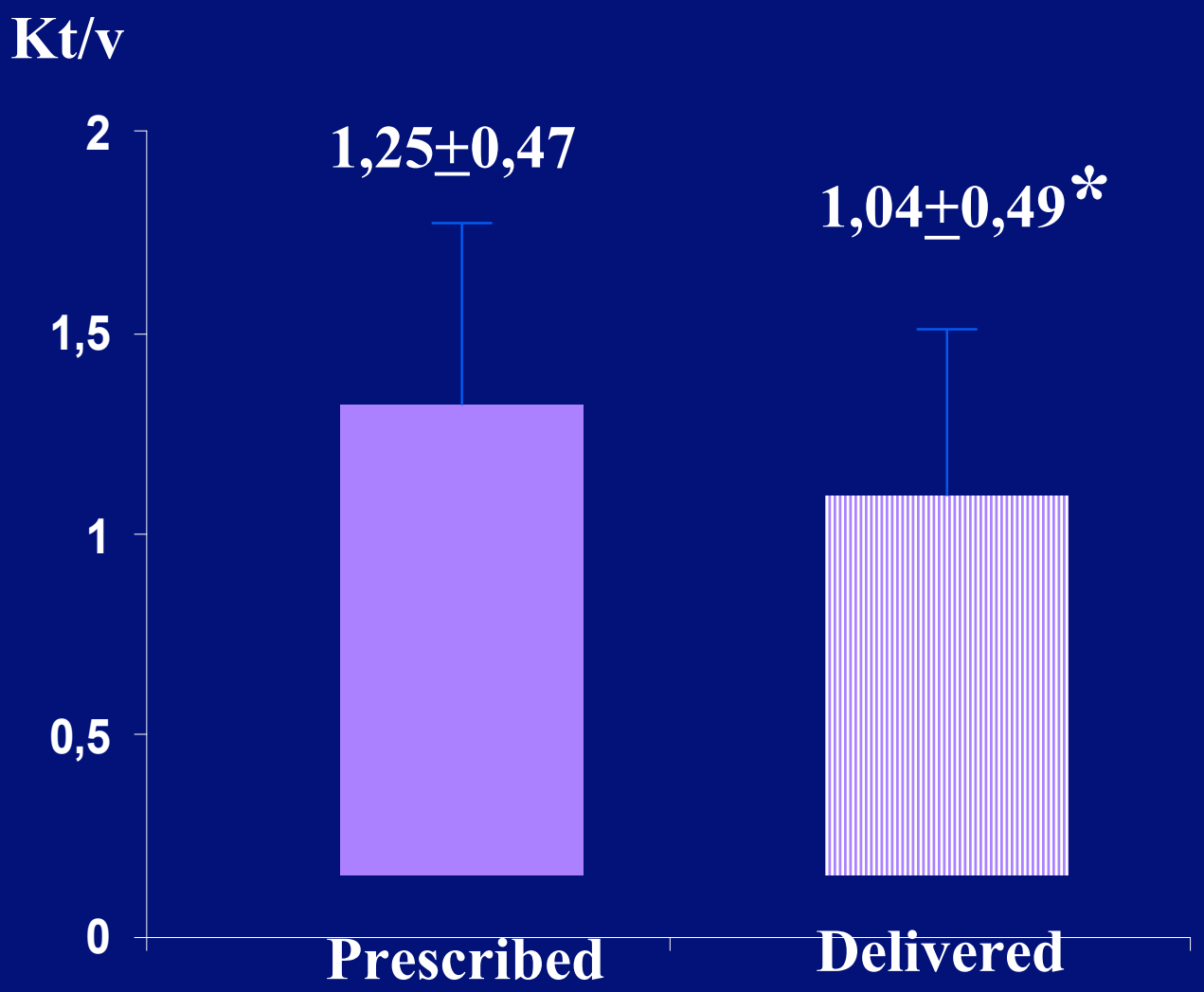
Qsg 200 ml/min

Qd 500 ml/min

Homme de 73 Kg + 10 litres: Vd urée = (42+10)=54 litres

6 heures

$$\frac{K.t}{V} = \frac{175 \times t}{54} = 1,2$$

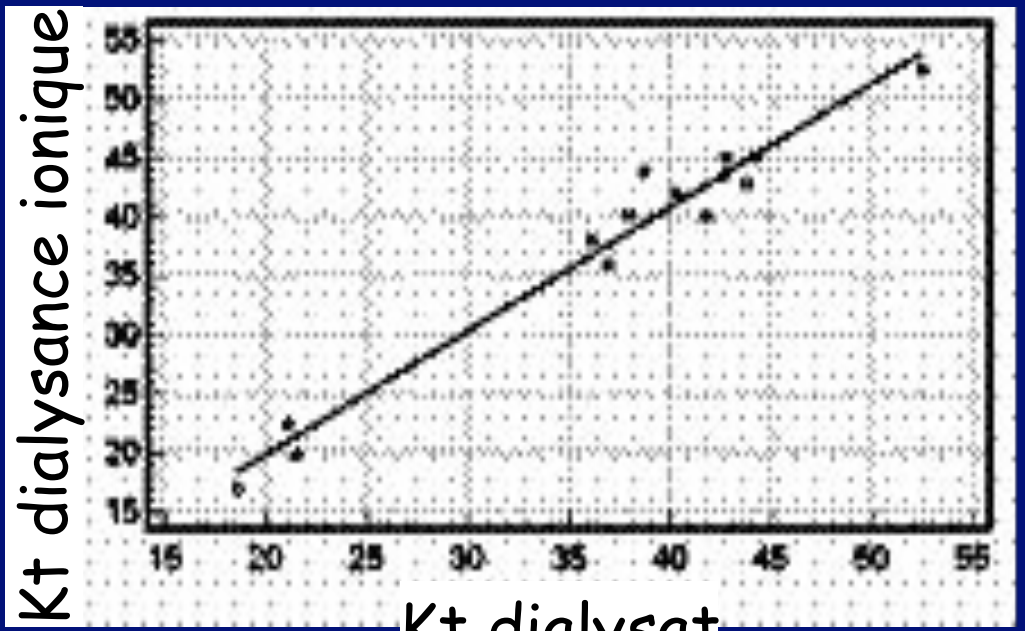


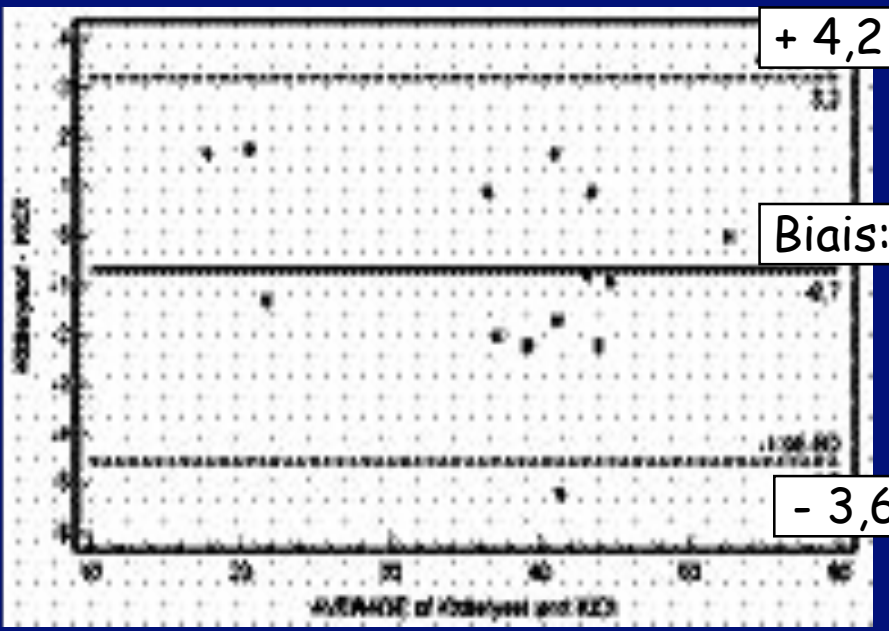
Everson et al. *Am J kidney Dis*, 1998

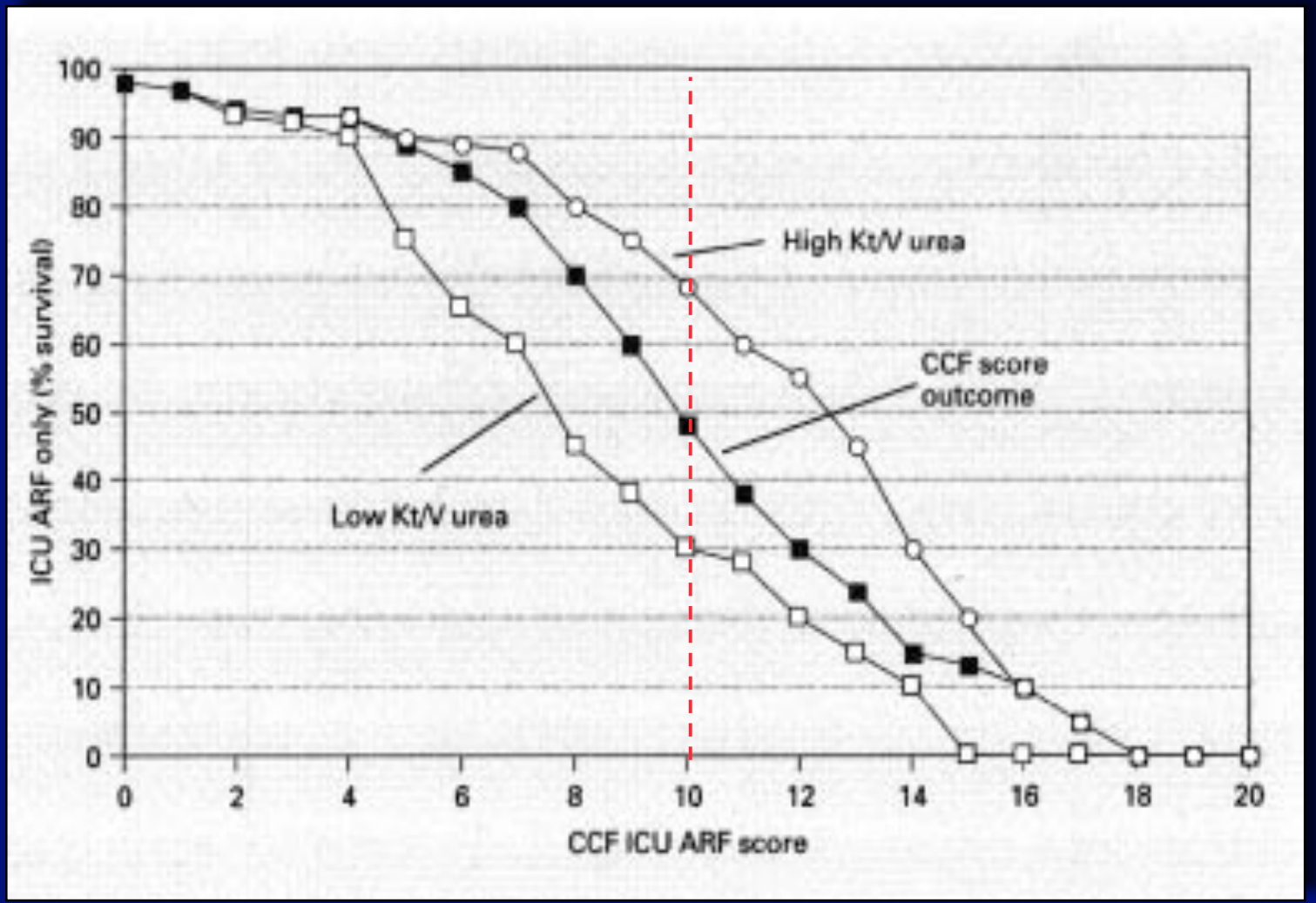
La dialysance ionique permet-elle d'évaluer en temps réel et de manière non invasive la dose de dialyse lors du traitement de l'insuffisance rénale aiguë en réanimation ?

C Ridel (1); D Osman (1); T Petitclerc (2); JL Teboul (1); C Richard (1); C Vinsonneau (3);
(1) Service de Réanimation Médicale, Chu Bicêtre, Le Kremlin Bicêtre; (2) Service de Néphrologie, CHU Pitié-Salpêtrière, Paris; (3) Réanimation des Brûlés, Chu Cochin, Paris;

SRLF 2005







Paganini et al. *Am J Kidney dis*, 1996

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3h25mn par 2j

3h20mn par jour

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