B|BRAUN
SHARING EXPERTISE

xevonta Pvkqebqf` Af^ivwbo

CHALLENGE THE THINKING

Choice of a suitable dialyzer

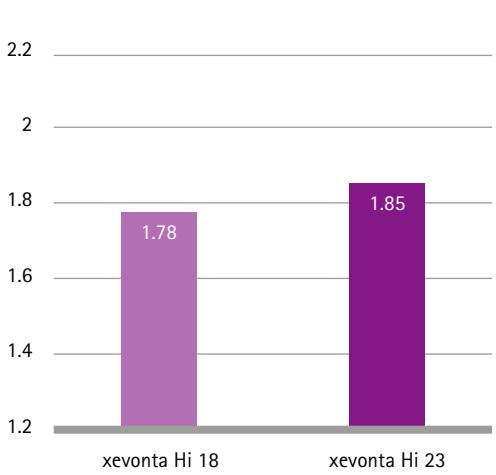
Pbib`qflk of a dialyzer is ^k important step ql ab`fafkd the uremic toxin elimination strategy lc ^ patient. There are many different properties ^ppl`f^qba with a dialyzer design. xevonta fs developed by _^i^k`fkd qeb membrane composition¿ ql target an increased removal of uremic toxins * especially for the class of middle molecules. Other properties fk`irab7

- ?iocompatible polysulfone membrane
- Eigh membrane permeability
- Luvdbk*cobb gamma sterilization

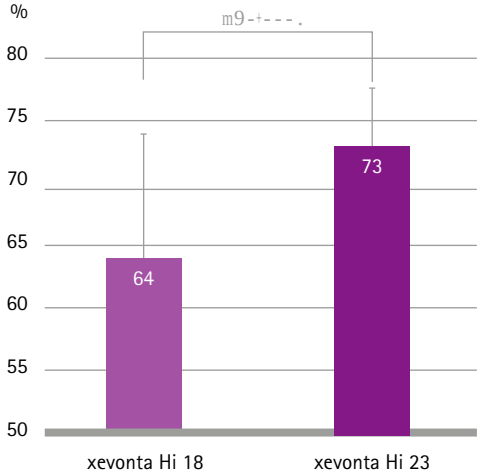
What effect `^k the dialyzer surface area have on clearance ?

Transport processes, either diffusive or convective, are the underlying mechanisms for elimination of substances during dialysis. Fk`ob^pb fk af^ivwbo proc^`b*pfwb `^k _b m^o^iibi ql nr^kqfqv ob j ls^i lc `boq^fk j lib`ribp+ Qefp fp abmbkabkq lk j lib`rib `e^o^`qbofpqf`p¿ ^s^fi^_fifqv lc qeb pr_pq^k`bp fk qeb afccbobkq m^qfbkq mllip¿ ^ka ^``bpp fk qeb _illa `fo`rfq+ A clinical study with twelve stable dialysis patients using different surface sizes of xevonta high-flux showed increasba spKt/V-values and Í / J -reduction rates when larger af^ivwbo surface-sizep were used ·.

Influence lc dialyzer surface-size on spKt/V ·



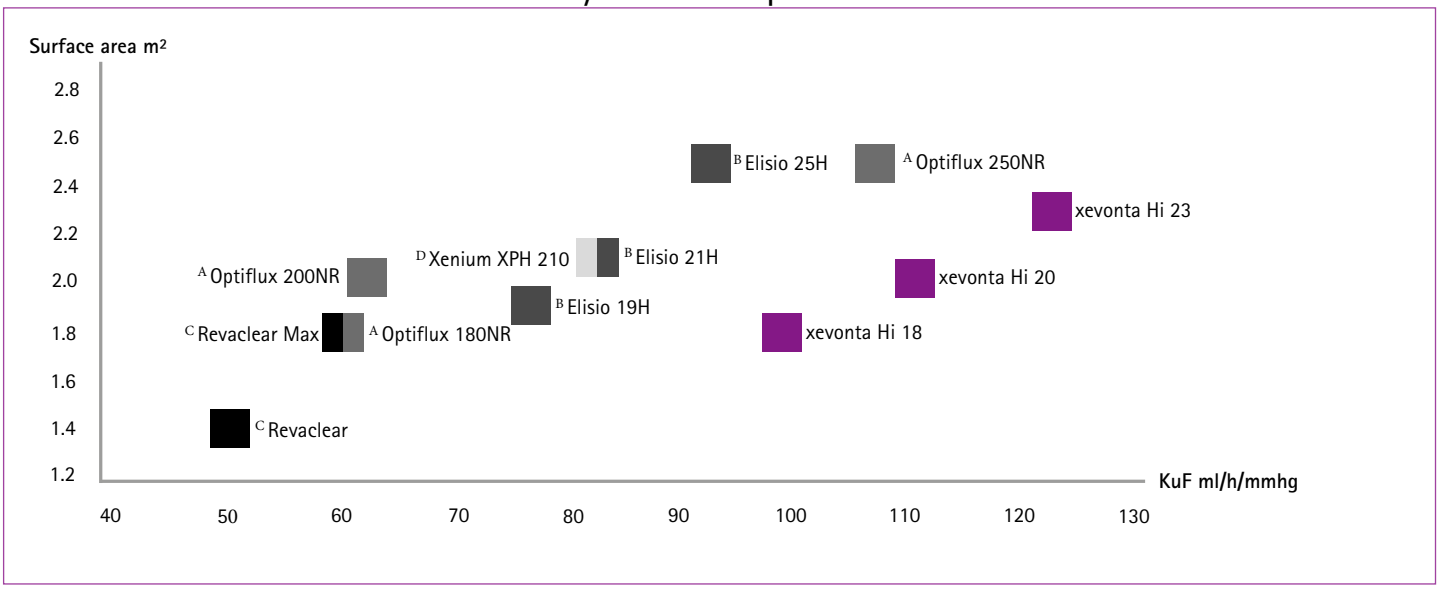
Influence lc dialyzer surface-size on ß2M reduction rate ·



What role does membrane permeability play in hemodialysis ?

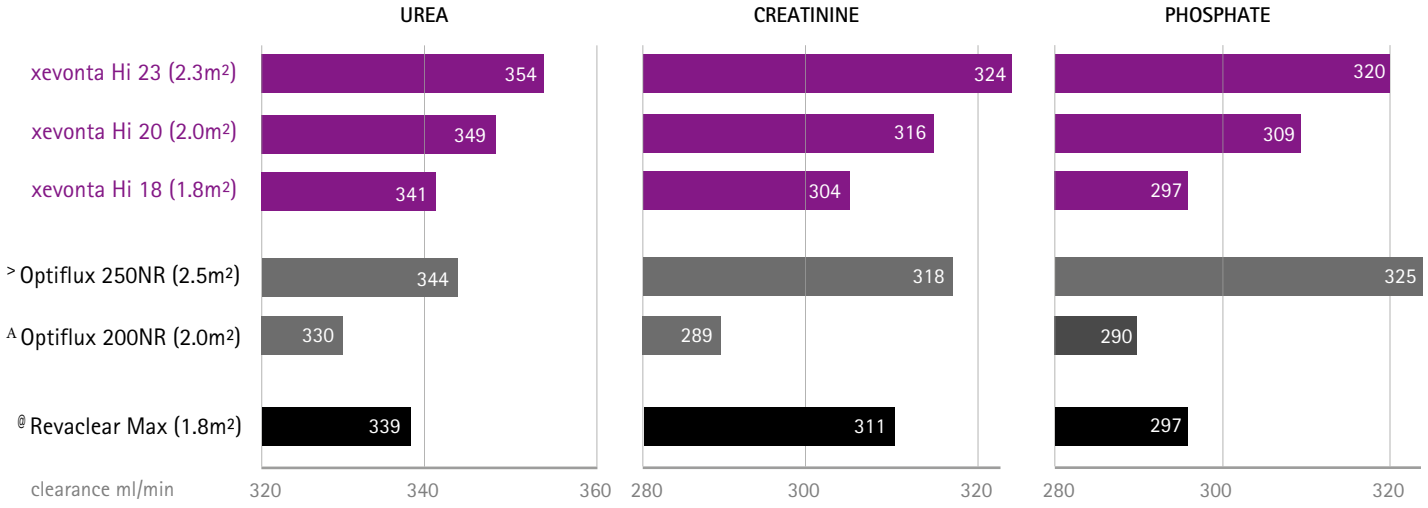
During hemodialysis¢ the formation of a protein layer sometimes referred to ^p secondary membrane formation or membrane fouling¢ can effect the hydraulic permeability of a dialyzer.[2] Membrane permeability can therefore be a key determinator of performance.[3]

Membrane performance based on surface size and KUF as an index of permeability of multiple membrane brands: Summary from different public sources



What is the in*vitro performance of small molecules ?

Conditions: Blood flow = 400 ml/min; Dialysate flow = 500 ml/min; Ultrafiltration flow = 0 ml/min



Plro`b7 ^``loafkd ql j^krc^`qrobo a^q^ ^ka pq^ka^oa FPL 5304 ¡ ^s^fi^_ib lkifkb ^p lc . /:-6-/ - . 3

> lmqfciru 7 eqqm7,,c j `k^*af^ivwbop*`l j ,af^ivwbop*pfqb,mac,Lmqfciru # / -Molar`q # / -?ol`erob # / -Pb`qflk,. - . -13*- . # / -Lmqfciru # / -Efde # / -Ciru=mac

? bifpfl 7 eqqm7,, t t t+kfmol+`l j , tm*`lkqbkq,rmil^ap,/ - . 1,. . ,BIFPFL*MM*?ol`erob=mac

@ obs^`ib^o 7 eqqm7,, t t t+_^uqbo+`l j ,^ppbqp,al tkil^ap,molar`qp\bumboqfpb,obk^i\qebo^mfbp,Obs^`ib^o\Pmb`\Pebbq\CFK>l=mac

A Ubkfr j 7 eqqmp7,, t t t+_^uqbo+`l j ,^ppbqp,al tkil^ap,molar`qp\bumboqfpb,obk^i\qebo^mfbp,UME\Pmb`\Pebbq\CFK>l=mac

REFERENCES:

· T^dkbo P+ bq ^i+ Fk`ob^pba ob j ls^i lc p j ^ii ^ka jfaaib j lib`ribp _v rpb lc j b j _o^kbp tfqe i^odbo proc^`b ^ka efdebo riqo^cfiqo^qflk `lbccf`fbkq+ Mlpqbo ^_pqo^`q BAQ> / - . / `lkafqflkp7 jb^k N? : 02- j i, j fk: NA : 2-- j i, j fk: jb^k af^ivpfp qf j b : /42 j fk: m^qfbkqp : . /: aro^qflk : 3 tbbhp: tbbhp: af^ivpfp j lab : EA

2 Yamamoto K, Hiwatari M, Kohori F, Sakai K, Fukuda M, Hiyoshi T. Membrane fouling and dialysate flow pattern in an internal filtration enhancing dialyzer. J Artif Organs. 2005;8:198–205.

0 Elbkf`e K>+8 Jb j _o^kbp ^ka cfiqbop clo e^b j laf^cfiqo^qflk: @lkqof_ Kbmeolı+ / - -48. 25?24*34+

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TECHNICAL & IN-VITRO PERFORMANCE DATA

Measuring conditions and physical data according to ISO 8637
UF-coefficient: , ?Isfkb ?il la, Hct. 32 %, total protein 60d, T = 37°C; Sieving coefficients: Q_B = 300 ml/min, Q_D = 500 ml/min

		Hi 18				Hi 20				Hi 23			
dialysate flow (Q_D) ml/min **blood flow (Q_B) ml/min**		**500** **200**	**500** **300**	**500** **400**	**800** **500**	**500** **200**	**500** **300**	**500** **400**	**800** **500**	**500** **200**	**500** **300**	**500** **400**	**800** **500**
Clearance: ultrafiltration flow (Q_F) = 0 ml/min	Urea	198	281	341	414	199	287	349	427	199	290	354	439
	Creatinine	191	263	304	372	196	271	316	390	197	276	324	403
	Phosphate	194	263	297		196	271	309		198	277	0/-	
	Vitamin B_{12}	155	184	210	239	161	195	220	259	166	204	227	272
S. C. (sieving coefficient) Q_B = 300 ml/min Q_F = 60 ml/min	β_2-Microglobulin	> 0.8											
	Albumin	< 0.001											
Ultrafiltration coefficient ml/h/mmHg	Q_B = 300 ml/min	99				111				124			
KoA Urea (QB = 300 ml/min, NA : 2-- j i, j fk'		.12-				.4.1				.6--			
Mof j fkd Slir j b¢ ?il lapfab (ml)		. .-				./2				.1.			
Membrane material		amembris polysulfone											
Surface area (m²)		1.8				2.0				2.3			
Sterilization		Oxygen-free gamma											
Wall thickness / inner diameter (µm)		35 /195											
Units per box		20											
Art. No.		7204403				7204404				7204405			

Data on file

Clo j lob fkclo j ^qflk¢ `lkq^`q ?+ ?o^rk Jbaf`^i Fk`+ ^q
.*5--*515*/-33¢ lo b j ^fi rp ^q oqa+rp = __o^rk+`l j

t t t+ ??o^rkRP>+`l j ,Af^ivwbop
Ou lkiv+ ¤/-.3 ?+ ?o^rk Jbaf`^i Fk`+ ?bqeibeb j M>¢ >ii ofdeqp obpbosba