

Diacap

Constant performance resulting in high quality dialysis



Avitum

B. Braun Avitum. Always with Passion.



B. Braun is a leading international company in the healthcare market. With a long tradition stretching back over 170 years, B. Braun is a global player with more than 41,000 employees worldwide and branches and subsidiaries on all continents.

B. Braun Avitum is a wholly-owned subsidiary of B. Braun and, for over 30 years now, one of the pioneering suppliers of dialysis technology. In offering complete solutions for extracorporeal blood treatment, B. Braun Avitum is one of the leading companies in research, manufacture, and therapy. Customers and patients throughout the world benefit from B. Braun Avitum's efficient and high-quality dialysis products and services.

The head office of B. Braun Avitum is located in Melsungen, Germany. A new B. Braun Avitum plant was also recently

established in Melsungen and this is also where the production of dialysis machines takes place.

B. Braun Avitum is a reliable partner and, in addition to dialyzers, also offers other products, such as the dialysis machine Dialog⁺, with its innovative options, such as Adimea, the data management system Nexadia, as well as all consumables; it has, therefore, become established as an integrated and trusted system provider.

In addition to its role as supplier of dialysis systems, B. Braun Avitum is also an important provider in dialysis treatment. B. Braun Avitum operates a global network of over 200 dialysis centers, in which well-trained doctors and nurses are helping over 10,000 chronic dialysis patients in Europe, Asia, and South Africa to achieve a better quality of life using the latest medical technology.

Expertise in production and development



Dialyzers are essential in hemodialysis. For over 10 years, B. Braun Avitum has carried out its own development and production in Germany in the area of dialyzers. Diacap dialyzers have been successfully used in dialysis centers throughout the world for many years and they offer consistent performance for achieving good quality dialysis. The modern fully-synthetic polysulfone dialyzers demonstrate excellent biocompatibility and good performance.

B. Braun Avitum places great value on its ongoing development of membrane materials and dialyzers as well as large-scale industrial production, so that patients can derive even greater benefit from dialysis therapy. The key to future success is continuous research and development.

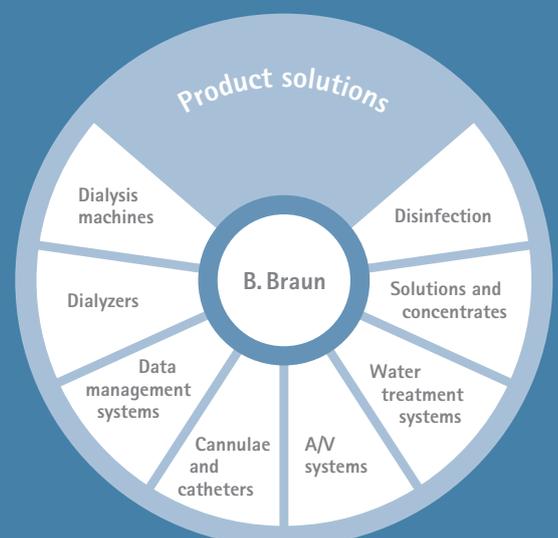
The manufacturing process focuses on product safety and quality. All B. Braun Avitum dialyzers satisfy the highest quality standards. The dialyzers are produced on the latest production lines. Automated test processes that far exceed industry standards ensure consistently high product quality.

Dialyzers by B. Braun Avitum are used every day throughout the world, contributing toward the quality of life of thousands of dialysis patients.

B. Braun Avitum A comprehensive system supplier

B. Braun Avitum has been a leading provider of dialysis care products for more than 30 years. The product range includes dialysis machines and dialysis consumables for chronic and acute dialysis.

B. Braun Avitum does much more than simply manufacture high quality dialysis machines, dialyzers and disposables. The company offers an integrated system which is composed of perfectly harmonized components. These include a wide range of therapy options and software solutions for an optimal dialysis and economic treatment processes. Technical services, planning, installation, training and process consulting complement our product offerings. Customers profit from the expertise of an all-round system supplier with comprehensive knowledge and experience of every aspect of the dialysis situation – from research through manufacturing to therapy.



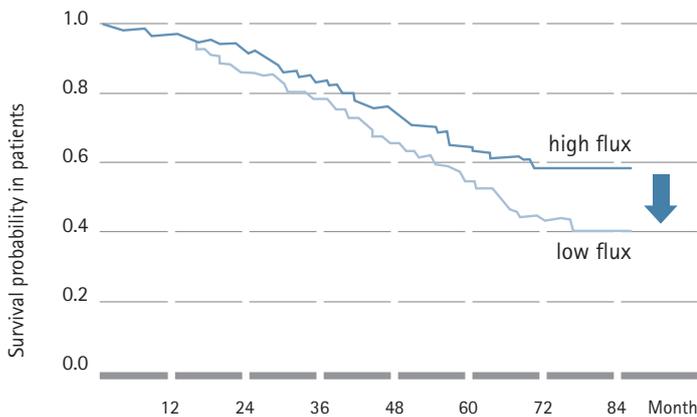
High Flux – the modern form of therapy in dialysis

High flux has benefits in high risk patients

- Middle molecules are the focus of scientific interest
- Current studies show a positive effect from high flux dialysis, especially in high risk patients
- Survival rates can be increased by the use of high flux dialyzers
- β_2 -microglobulin is a marker protein for middle molecule clearance

MPO study results¹

- Significant survival benefit from treatment with high flux dialyzers
- Use of high flux dialyzers in patients with a serum albumin level of ≤ 4 g/dl was able to significantly reduce the relative mortality risk by 37%
- Mortality was also significantly reduced in diabetes patients
- β_2 m elimination over the course of treatment in the high flux group was significantly greater than in the low flux group



Clinical evaluation

- Patients who are elderly, suffering from malnutrition or who have several accompanying illnesses can benefit from high flux dialysis
- Chronic inflammation can be reduced
- Side effects such as dialysis-associated amyloidosis with the clinical symptoms of carpal tunnel syndrome or vascular changes (destructive arthropathy) can be prevented by higher β_2 m elimination

Addition to EBPG²

- Incorporation of the MPO study into the European Best Practice Guidelines (EBPG)
- European Renal Best Practice advisory board strongly recommends the use of synthetic high flux membranes for all dialysis patients

37% reduction in the relative mortality risk of patients with malnutrition under high flux dialysis

Fig.: Kaplan-Meier survival curve in patients with serum albumin ≤ 4 g/dl in the low flux and the high flux group (Log-rank Test P = 0.032)

Conclusion

Patient outcome can be improved.

All patients should be treated with modern high flux dialyzers!

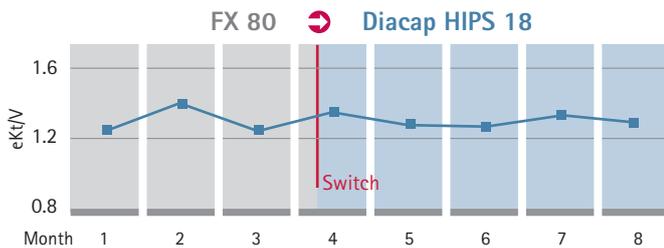
Diacap HIPS

Performance confirmed by studies

Diacap HIPS dialyzers offer consistently reliable and efficient dialysis³

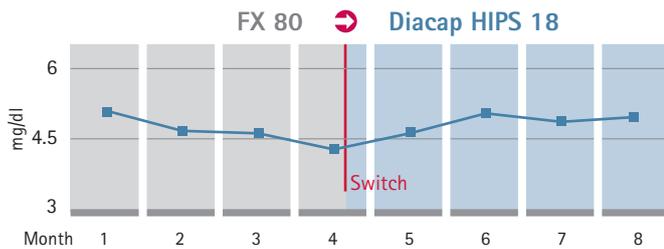
Study design

55 patients, duration: 8 month, surface area: 1.8 m², dialysis mode: HD



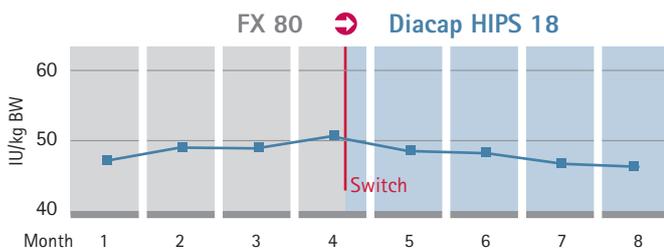
Delivered dialysis dose (eKt/V)

No changes in eKt/V after the switch. Patient levels stayed constantly good. The minimal eKt/V level should be above 1.2, which corresponds to a spKt/V of 1.4.



Course of phosphate

Diacap shows constant elimination of phosphate over the study period. No significant changes after the switch from the FX dialyzer to Diacap.



Heparin usage

Heparin dosage was stable over the study period. Important also after the switch: the amount of heparin is constant. No significant changes occurred.

References: ³ Bonilla B et al.: Nefroval, Spain, 2008; Measurement conditions: patients = 55, duration = 8 months, dialysis mode: HD, treatment time: 234 min, mean Q_B = 308 ml/min, mean Q_D = 550 ml/min

Conclusion

Studies confirm that the efficiency and quality of dialysis remains constant and comparable over a long treatment period with Diacap

Diacap HiFlo

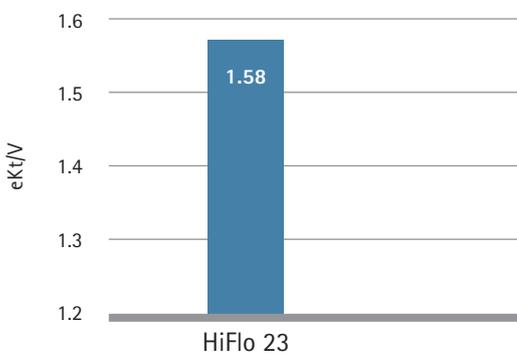
For efficient high flux dialysis and hemodiafiltration

Study confirms excellent performance of Diacap HiFlo⁴

Study design

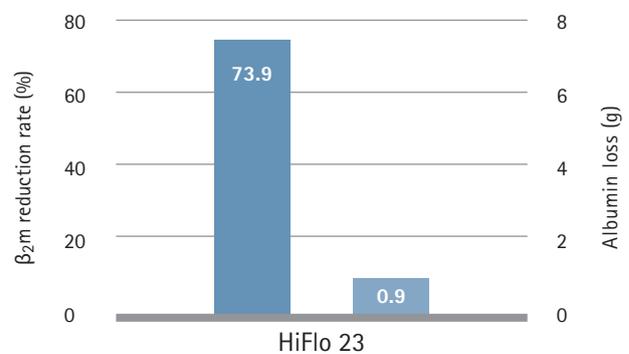
15 Patients, duration: 2 weeks, dialysis mode: HDF

Delivered dialysis dose (eKt/V)



Diacap HiFlo achieved an average eKt/V of 1.58 during the study. The minimal eKt/V level should be above 1.2, which corresponds to a spKt/V of 1.4.

Middle molecule removal and albumin



Clinical studies show that Diacap HiFlo demonstrates a very good reduction rate of middle molecules (β_2m), with especially low albumin loss.

References: ⁴ Pedrini L et al.: Efficiency of post-dilution hemodiafiltration with a high-flux-polysulfone dialyzer, Int J Artif Organs 34 (5): 397-404 (2011); Measurement conditions: patients = 15, duration = 2 weeks, dialysis mode: HDF, treatment time: 224 min, mean Q_B = 372 ml/min, mean Q_D = 554 ml/min;

Conclusion

In addition to excellent small molecule clearance, Diacap HiFlo demonstrates a very good balance between high β_2m -elimination and minimal albumin loss, as the study results verify

Constant performance, resulting in consistent quality of dialysis

Reliability

- Constant good performance (low molecular clearance, Kt/V)
- Delivery on time every time

Safety

- Proven polysulfone membrane
- Gamma sterilization

Quality

- Made in Germany
- Over 10 years of membrane & production expertise

Trust

- Excellent service & support

Reliability

- Constant good performance in small and middle molecule clearance especially urea, phosphate, creatinine, and β_2 -microglobulin
- Good albumin retention (HiFlo) in dialysis patients with malnutrition
- Full product portfolio

Safety

- Proven polysulfone membrane for optimal endotoxin retention
- For years, gamma sterilization has been known to be a safe, well-tolerated, and tried and tested form of sterilization that does not leave any residues in the final product
- Detachable extra label for medical record keeping and 100% product traceability

Quality

- Over 10 years' know-how in membrane development and production. All dialyzers are manufactured using the latest production equipment and ensure consistently high product quality



Diacap

Reliable and safe dialyzer of high quality from B. Braun, a trusted partner

Diacap Product Family

Variety for efficient treatment quality

Diacap high flux dialyzers

	HIPS 10	HIPS 12	HIPS 15	HIPS 18	HIPS 20	HiFlo 18	HiFlo 23
Surface (m ²)	1.0	1.2	1.5	1.8	2.0	1.8	2.3
Ultrafiltration coefficient (ml/h/mmHg)	34	42	50	55	58	78	92
Priming volume bloodside (ml)	58	68	90	110	121	100	120
Wall thickness/internal diameter (µm)	40/200			38/195			
Units per box	20						
Article number	720 3622	720 3630	720 3649	720 3657	720 3665	720 3673	720 3681

Diacap low flux dialyzers

	LOPS 10	LOPS 12	LOPS 15	LOPS 18	LOPS 20
Surface (m ²)	1.0	1.2	1.5	1.8	2.0
Ultrafiltration coefficient (ml/h/mmHg)	6.8	7.9	9.8	12.3	13.7
Priming volume bloodside (ml)	58	68	90	110	121
Wall thickness/internal diameter (µm)	40/200				
Units per box	20				
Article number	720 3525	720 3533	720 3541	720 3550	720 3568

Conclusion

The Diacap family offers an extensive portfolio for all therapy requirements. Dialysis patients can be efficiently treated with LOPS, HIPS, and HiFlo



