MAX SUB ON SURDIAL™ X

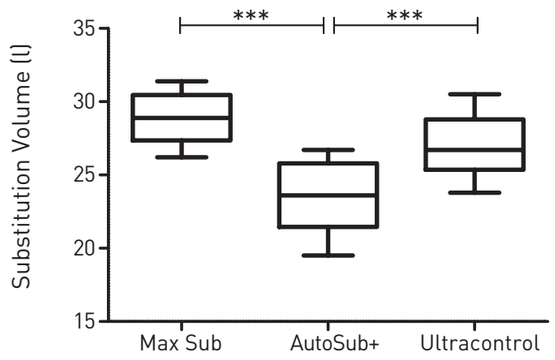
Surdial X hemodialysis machine contains an automated feature called Max Sub. The automated Max Sub function calculates and measures the highest possible substitution rate individualized for each patient based on a pressure control system by following the TMP.

The choice of machine can impact treatment efficiency

A personalized dialysis treatment is becoming more essential, especially for high convective HDF therapies.

The volume that can be reached during this type of treatment is dependent on patient, dialyzer, machine, and the machine's individualized substitution function.

The automatic substitution function on a dialysis machine plays a crucial role in obtaining the most efficient substitution volume. Therefore, the choice of machine can impact treatment efficiency.



The substitution volumes reached with 3 different individualized substitution functions on the same patient group. n=9; ***p<0.001. Data from the convective Meknes study.[6]

Max Sub on Surdial X

- reaches the highest convective volumes[6]
- patient survival improves with a substitution volume > 23.1 l/session;[7] Max Sub reaches these levels easily

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7. Maduell F, et al. High-efficiency postdilution online hemodiafiltration reduces all-cause mortality in hemodialysis patients. J Am Soc Nephrol. 2013 Feb;24(3):487-97.

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RENAL CARE

HIGH VOLUME HDF
SCIENTIFIC

NIPRO MEDICAL EUROPE

SOLACEA™

SOLACEA features an asymmetric triacetate (ATA™) membrane made by a state of the art spinning technique for dialyzer fibers.

This unique high flux dialyzer, with new ATA structure, combines the asymmetric design of a synthetic membrane with the benefits of a semi-natural fiber.

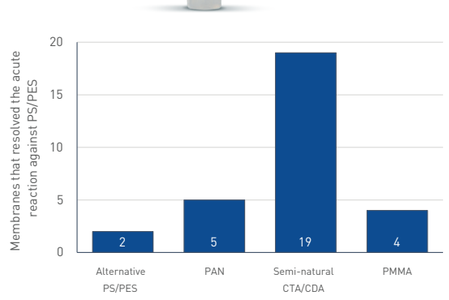
SOLACEA: high volume HDF treatment for sensitive patients

The frequency of patients having acute reactions to polysulfone (PS) or polyethersulfone (PES) membranes appears to have increased in the last few years. Most of these hypersensitivity reactions were resolved when the patients were placed on a semi-natural cellulose-based membrane.[1]

However, traditional cellulose triacetate membranes are limited in their ability to cope with high volume convective therapies, leading to a reduction of treatment efficiency for high volume HDF patients that are sensitive to PS/PES.

The ATA membrane of SOLACEA:

- is a semi-natural cellulose-based membrane equipped to perform high convective therapies
- is BPA-free and PVP-free
- allows sensitive patients to be kept on high convective therapies without loss of treatment efficiency



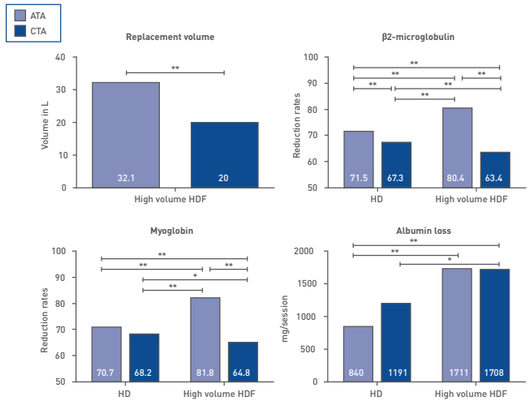
Membrane that resolved the acute reaction against PS/PES membrane[1]

High volume HDF linked to improved patient survival

High volume HDF (> 20 l/session) has been shown to improve patient survival, which was linked to greater reductions in inflammatory mediators and middle molecular weight molecules.[2]

High volume HDF with SOLACEA:

- easily reaches high convective volumes > 20 l/session, without TMP issues
- has excellent clearances of middle molecular weight molecules with limited loss of albumin



Substitution volume, middle molecular clearances, and albumin loss on a conventional triacetate and ATA membrane. Figures adapted from F. Maduell, et al[2]

ELISIO™

The ELISIO dialyzer series, with its Polynephron™ polyethersulfone (PES) membrane, has excellent biocompatible attributes. These characteristics improve patient well-being and treatment outcome.

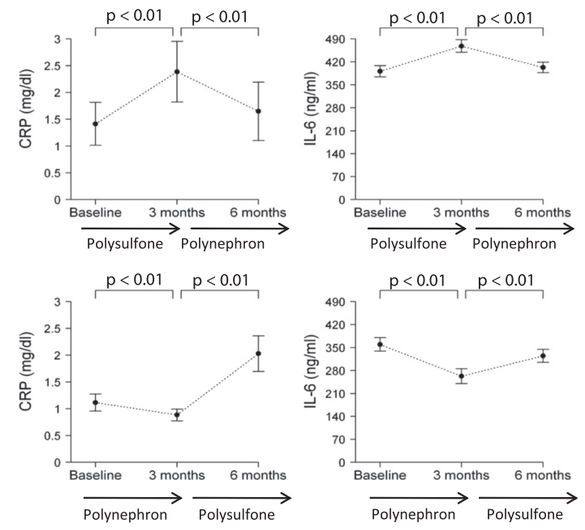
Low inflammation induction with ELISIO

Inflammatory levels in hemodialysis patients are elevated, generally due to the lack of kidney clearance of several molecules, but also because of the hemodialysis treatment itself. It is pivotal to keep dialysis treatments as biocompatible as possible.

The dialyzer plays a key role in this process. The choice of dialyzer can have different effects on, for example, the progression of C-reactive protein (CRP) and interleukin-6 (IL-6), which are powerful predictors of mortality and cardiovascular disease.[3]

The PES-based Polynephron membrane of ELISIO:[4]

- induced less CRP and IL-6 production over a 3 month period
- patients had better pre-dialysis levels of CRP and IL-6 compared to a standard membrane



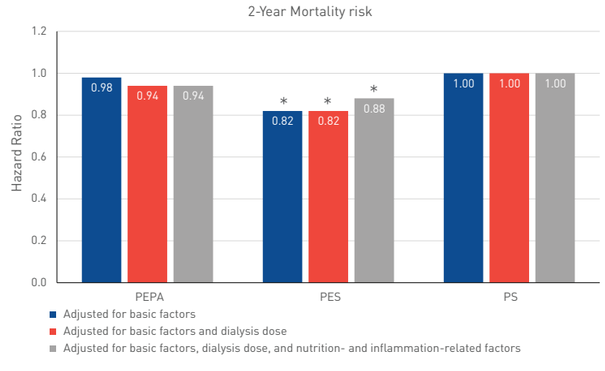
Pre-dialysis IL-6 and CRP in patients dialyzed with polysulfone or polynephron dialyzers for 3 months. Figures from R. Bosch, et al.[4]

2-Year study: patient survival on different dialysis membranes

There are many membranes currently on the market that are chemically different, but there is little known about the potential impact these differences have on patient survival. The biggest population of dialysis patients is treated with synthetic fibers made of PS, PES, or polyester polymer alloy (PEPA). Recently, it has been suggested that the choice of membrane type can have an impact on the 2-year hazard ratio and subsequent patient survival.[5]

PES membrane:[5]

- has a lower hazard ratio
- suggests that the mortality risk for hemodialysis patients might differ by the type of dialyzer membrane used, in which the PES membrane scores better than the PS membrane



2-Year hazard ratio on PEPA, PES, and PS with different adjustment levels.
PEPA n=10112; PES n =20693; PS n=77 897;
*p<0.001 vs. PS. Figures adapted from M. Abe, et al.[5]