Extended Daily Diafiltration (EDD-f)
Advancing acute treatment for your critical care needs
Extended dialysis in treating acute renal failure was first performed by W.J. Kolff in 1945\(^1\). In the last sixty years, numerous forms of hybrid techniques have been evolved to treat critically ill patients in ICU. These new treatments include:

- Extended dialysis – ED
- Slow continuous haemodialysis
- Extended daily dialysis – EDD
- Sustained low efficiency dialysis – SLED
- Sustained low efficiency daily diafiltration – SLEDDf
- Prolonged intermittent renal replacement therapy – PIRRT
- Prolonged daily intermittent renal replacement therapy – PDIRRT
- And many other related, descriptive terminologies

**EDD-f: Evolving Beyond All Expectations**

Globally, renal replacement therapy for acute renal failure varies greatly in practice. EDD-f combines the best aspects of various treatment modalities by adding the therapeutic advantages of continuous renal replacement therapy (CRRT) to operational and cost benefits of conventional haemodialysis (IHD).

- The high efficiency of EDD-f achieves treatment goals in 8–10 hours. Machine utilization is enhanced with increased patient flow
- EDD-f allows patients to be accessible and to be mobilized for other medical treatments\(^2,3\)
- Circuit clotting and heparin requirements are greatly reduced. This is particularly beneficial to patients with severe bleeding tendencies\(^3,4\)
- Re-design of the dialysis machine for EDD-f provides a streamlined procedure suitable in treating critically-ill patients and with less workload for operators\(^4,5\)

**Advancing Acute Treatment Using EDD-f**

Data presented in this brochure are based on clinical experience with hybrid therapies from which EDD-f evolved. Among available hybrid techniques, EDD-f offers additional convective clearance, providing enhanced removal of middle to large solutes\(^4\), which is beneficial to patients with sepsis and multi-organ failures.
EDD-f Offers Haemodynamic Stability To Critically Ill Patients

- Excellent patient tolerance with well-maintained blood pressure and heart rate$^2$
- Ultrafiltration (UF) volumes delivered are close to prescribed goals$^3$
- Extended treatment duration allows for slower UF rates, which contribute to haemodynamic stability, adequate fluid control and dose delivery
- Corrects fluid overload while allowing administration of vital fluids such as parenteral nutrition, blood products and various intravenous infusions$^4$

EDD-f Avoids Solute Disequilibrium and Re-establishes Acid/base Balance

- Excellent clinical achievements with 63% decrease in blood urea levels and a 53% decrease in creatinine levels$^3$
- Good acid/base control due to significant removal of lactate and the use of bicarbonate-buffered dialysate and replacement solutions
- Avoidance of rapid concentration shifts and associated changes in cerebral volume with an extended treatment time
- Online production of bicarbonate-buffered solutions lets the user adjust electrolyte concentrations customized to each patient’s requirements
Reduced Circuit Clotting With Less Anticoagulant For Simpler And Safer Treatment

- Circuit clotting occurs less frequently in EDD-f compared with CRRT\(^5\)
- Hourly heparin dose and total daily requirements are much less than with CRRT\(^4\)
- More heparin free treatments can be achieved than with CRRT\(^4\)
- With a reduced need for heparin, EDD-f may be particularly advantageous for patients with severe bleeding tendencies\(^5\)
- Fresenius Polysulfone\(^®\) haemofilters maximize biocompatibility. This ensures minimal complications due to inflammation and coagulation during treatment\(^6,7\)

Logistical And Financial Advantages With Online Fluid Production Technology

The Fresenius DIASAFE\(^®\) plus double filtration system generates ultrapure solution that reaches the standard set by the European Pharmacopoeia (1997). Fresh solutions are prepared through precise proportioning and mixing of electrolyte concentrates and bicarbonate buffer inside the machine. This online technological innovation brings unsurpassed advantages:

- Increase convective clearance for larger solute removal\(^3\)
- Individualize treatment allowing user prescribed electrolyte concentrations
- Reduce workload by easy machine operation and less handling
- Cost-saving by eliminating need for commercial solution bags
- Promising techniques such as high-volume haemofiltration can now be prescribed more safely, delivered easily and at lower cost

- DIASAFE\(^®\) plus reduces the bacterial concentration of dialysate\(^13\)
- DIASAFE\(^®\) plus reduces the endotoxin concentration of dialysate\(^13\)
Extended daily diafiltration (EDD-f)

Innovative treatment for your critical care needs

**EDD-f is a hybrid therapy**

that delivers a gentle yet effective *Diffusive* and *Convective* treatment for acute renal failure patients.

**CRRT**

Well-maintained haemodynamic stability\(^5\)

Excellent control of fluid balance\(^1\)

Avoidance of metabolic fluctuations\(^1,5\)

Correction and prevention of electrolyte abnormalities\(^1\)

**Conventional Haemodialysis**

High clearance efficiency

Precise UF control

Low running costs

+ Less need for anticoagulation\(^3\)
+ Fewer clotting complications\(^2,3\)
+ Patient mobility\(^1\) for optimal care
+ ONLINE dialysate and substitution solution generation\(^1\)
+ Reduces logistic and financial burdens\(^1\)
+ Makes High Volume Haemofiltration easier and affordable\(^1\)
EDD-f: The Promising Technique For Now And The Future

Combining the advantages of conventional dialysis and CRRT, EDD-f further enhances renal replacement techniques in treating acute renal failure.

As part of the long-standing commitment to advancing acute therapies, Fresenius Medical Care will continue to lead in this field to develop innovative treatment tools and promising new techniques serving the medical needs today and in the future.

References


Please contact your local sales representative for more information and a demonstration.