

**Comparison of two heparin-free dialysis modalities to the saline flushes reference method**

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**Introduction:** The anticoagulation of the extracorporeal circuit during a session of chronic haemodialysis remains a major issue for patients at risk of bleeding. This study aims at comparing 3 modalities of heparin-free dialysis.

**Patients and Methods:** Prospective, cross-over study with 32 patients, with arterio-venous fistula. Each patient undergoes 3 consecutive dialysis sessions without heparin, with one of the 3 modalities:

- Haemodialysis with saline flushes and polysulfone membrane (FX100)
- Predilution-HDF with low substitution volume (80 ml/min) and polysulfone membrane (FX100)
- Haemodialysis on pre-heparinized AN69ST membrane (Evodial).

The evaluated criteria are presented in the following chart.

**Results:** Analysis was performed on 93 sessions (3 sessions were interrupted because of poor hemodynamic and digestive tolerance).

Results are presented in the chart:

	Saline flushes FX100 (n=32)	HDF Pre-dilution (4.8 L/h) FX100 (n=32)	Evodial(AN69ST) (n=29)
4h session w/o clotting - n(%)	25 (78%)	25 (78%)*	27 (93%)*
Mean duration w/o clotting (min)	213 +/- 50	220 +/- 45*	238 +/- 7*
Massive clotting - n(%)	6 (18,7%)	5 (15,6%)	0
Delay prior to clotting (min)	103 +/- 44 min	119 +/- 47 min	-
Premature stop - n(%)	5 (15,6%)	4 (12,5%)	2 (6,9%)
Intervalle prior to rinse-back – ml/min	209±10	220±13	216±22

HDF vs Flushes\*: NS; Evodial vs Flushes\* and vs HDF-predilution: p<0,05

**Discussion :** European best practice guidelines recommend circuit flush with saline solution, that expose to risk of clotting, or regional citrate anticoagulation which carry operational difficulties. This study shows comparable results between reference method (saline flushes) and low volume HDF pre-dilution. However, use of saline flushes generates higher workload for nursing staff. Pre-heparinized AN69ST shows significantly better results.

**Conclusion:** Hemodiafiltration with low substitution rate can be an alternative to flushes for patients who have a temporary contra-indication to anticoagulation. Pre-heparinized AN69ST shows excellent results, at a significantly higher cost.