

Special Supplement on NEPHROLOGY*Editorial***DILIP KUMAR PAHARI**

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Anticoagulant free hemodialysis

Anticoagulant is necessary to prevent blood clotting in the dialysate. Unfractionated heparin is the anticoagulant of choice. However, in many clinical situations, anticoagulant is strongly contraindicated, like recent surgery, intracranial bleeding, GI bleeding, poly trauma etc. When blood flow kept low as in continuous renal replacement therapy or sustained low efficiency dialysis, possibility of clotting is high and some form of anticoagulation is necessary. Regional citrate is suitable in these situations. However, citrate anticoagulant is not freely in India. Normal saline flush 100 ml every 10 to 15 min. interval into the blood compartment prior to filter flushes dialyzer and venous chamber as well as commonly used. In some blood tunings there is a net filter in the venous chamber and clotting starts there. If no clotting detected the procedure repeated every 10 to 15 min interval. When the blood flow is low as in prolonged intermittent therapy, clotting still happens esp. when flushing is delayed. 5-10% filter clotting is reported with this technique.

In the current study, pre delusional hemodiafiltration used as means of coagulant free dialysis. Typically it provides sterile dialysate fluid infused 10 to 25 liters continuously into the blood compartment, diluting blood and prevents clotting. When blood flow is good and more than 250 ml/min, substitution volume is also close to 20 liters/4hr. HDF session, and there is little clotting. On the other hand, when blood flow is low as 100 ml/min, the infusate volume is typically 10 liters/4-6hr HDF session, there is increased chance of clotting and need additional flushing of the dialyzer. The substitution volume is typically linked to blood flow keeping in mind the post filter delusional method. Higher the blood flow, more substitution fluid. The ultrafiltration rate kept maximum up to 20% of the blood flow to prevent blood clotting. Only in some models, the substitution volume may be fixed manually in pre-delusion method.

The additional cost of the procedure is negligible. It consumes more dialysis concentrate, and cost may be less than 100 rupees per session. The major advantage with this method is it provides hemodiafiltration as opposed to hemodialysis. This gives a better middle molecular clearance and much more hemodynamic tolerance.

If the intermittent therapy is prolonged up to 6-8hrs. and blood flow kept less than 250ml/min. additional flush every 20-30 min. interval is necessary. When the session is 4hrs. and blood flow is more than 250 ml/min. additional infusion is not necessary. For a check, one flush at the end of 15min. period from the beginning, and absence of clotting will be reassuring. We find this method is very helpful.