COAGULATION OF EXTRACORPOREAL CIRCUIT

Bottomline

- *Early identification to minimise blood loss for the patient*
- *Monitor machine venous and arterial pressures throughout dialysis.*
- *Clinical signs*
    - *Increase in venous pressure*
    - *Darkening of blood in the lines.*
    - *Foaming with subsequent clot formation in venous bubble trap.*
- *Flush the lines with 200ml of normal saline to visualise dialyser and venous bubble trap if you suspect clotting.*
- ***If minimal clotting** – continue but observe (consider increase in heparin dose)*
- ***Severe clotting:** consider changing clotted venous bubble trap or complete extracorporeal circuit then resume dialysis.*
- *Notify medical officer if lines change in case an FBC is required.*
- *Always check for line kinking.*

OBJECTIVES

- Prompt management of clotting in the extracorporeal circuit.
- Minimise blood loss and complications for the patient.

Clinical signs

- Increase in venous pressure
- Darkening of blood in the lines.
- Shadows or dark streaks in dialyser (Daugirdas et al., 2001).
- Foaming with subsequent clot formation in venous bubble trap.

Assessment

- Flush the lines with 200ml of normal saline to visualise the dialyser and the venous bubble trap.

1. **<u>If no evidence of clotting</u>** look for another source of increased venous pressure such as kinking of the lines. *Line kinking post pump has been associated with haemolysis (Abtahi et al., 2007; Dutka, 2007; Malinauskas, 2008; Polaschegg, 2009).*

2. **<u>If minimal clotting</u>** allow dialysis to continue. Consider whether to increase the heparin dose or in the event of heparin free dialysis increase the frequency of the flushes. Check for kinked tubing.

3. **<u>If there is severe clotting</u> disrupting the dialysis**, ask a colleague to assist in the following procedures.

<u>Changing a clotted venous bubble trap</u>

1. Flush with normal saline until the venous line is as clear as possible. Stop the blood pump.
2. Using sterile technique, disconnect the venous line from the dialyser and patient.
3. Connect the new line to the dialyser, unclamp the arterial line and allow blood flow to resume, drain off prime until the blood passes through the venous trap.
4. Connect the venous line to the patient and replace the line back in the clamps on the machine.
5. Resume dialysis and consider measures to prevent further clotting eg increasing heparin, flushes.

<u>Clotted dialyser and blood lines</u>

Return as much blood as possible and prime a new set of lines and a dialyser. Consider measures to reduce further episode of clotting. Notify M.O. in case a FBC will need to be collected.

References

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