



crrt

Aquarius System

TIPS FOR IMPROVING SET LIFE

Optimise vascular access

- *Consider using a high flow silicone catheter* that does not have kink memory with the appropriate length for the site of entry.
- Avoid attaching the Aquarius to a vascath that does not have good flow. I.e. easily withdraw 20mls of blood in 6 seconds or 10mls of blood in 3 seconds without interruption to flow.
- *Consider rotating the hub of the catheter 90°* so that the holes on the access lumen are facing the flow of blood, not against the vessel wall (you need to momentarily stop the blood pump to do this).
- *Consider the patients intravascular volume.* Even though they may be fluid overloaded, if their intravascular space is dehydrated, there will be poor flow through the catheter and the filter and encourage clotting.

Optimise anti-coagulation

- *High return pressure is a sign of under anti-coagulation. Check clotting and optimise.* The blood pump wants to push the blood through the return chamber but the small clots grow and occupy space making it difficult for the blood to squeeze through. This is how the return pressure builds up.
- *Consider increasing the proportion of pre-dilution if unable to use anticoagulation to optimise filter life but with reduced clearances.*
- *Consider 90% pre-dilution and 10% post-dilution to thin the blood passing through the return chamber.* If you are using all pre-dilution, you may find that neat blood in the return chamber clots more easily leading to high return pressure.

Proactively prevent clotting in the set

- *Keep the level of the blood in the return chamber as high up as possible.*

This will reduce the blood-air interface and reduce clot formation. If a clot forms in the return chamber it seals off the chamber and blood will not flow through it. Wearing appropriate Personal Protective Equipment (PPE), carefully withdraw the air using a luer-lock syringe. Clamp the line and place a clean bung on the end. Ensure that the port is clear of blood so that it does not clot off. A 5ml flush of saline after drawing up the blood level should achieve this.

Proactively prevent clotting in the filter

- *Keep the filtration ratio below 25%*

Filtration ratio is a measure of haemoconcentration in the filter (filtrate removed as a percentage of blood flow). It is how much blood is going into the filter compared with how much ultrafiltrate is taken out. For example: a filtration ratio of 16% means that of the blood that passes through the filter, 16% of the blood's volume is removed as ultrafiltrate. This value can be seen in the, 'more screen option'.

- The minimum blood pump speed in the programming guide allows the blood pump to push enough blood into the filter to achieve ultrafiltrate loss without clotting off the filter.
- The lower the filtration ratio the longer the filter will last.

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Proactively prevent clotting in the filter

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- The faster the blood pump the lower the filtration ratio. Consider increasing the blood pump speed by 10% of the minimum if the patient can tolerate it.
- When connecting the patient, do not start the treatment by pressing the treatment key until the target blood pump speed has been achieved. This will prevent unnecessary haemoconcentration at the beginning of your treatment.

Proactively prevent clotting in the filter

- *Re-circulate for 5-20 minutes before connecting the patient.*

Recirculation soaks the filter fibres in substitution fluid and pushes out air trapped within the fibres. Saturating the filter fibres opens them up which allows better flow of blood through them and the absence of air bubbles gives less opportunity for early clotting.

We recommend a minimum recirculation time of 5-20 minutes but some units have found that if they recirculate for longer then they get improved set life. However, the extended recirculation time needs to be offset against the reduced treatment time. The set is guaranteed for 72 hours of use, recirculation time is included within the 72 hours.

Baxter CRRT Telephone Contacts

CRRT Account Manager (Scotland / N East)	Amanda Lyall	07825 374893
CRRT Clinical Specialist (Scotland / N East)	Alexandra Orr	07717 542253
CRRT Account Manager (Midlands / N West / N Wales)	Edward Thompson	07825 374899
CRRT Clinical Specialist (Midlands / N West / N Wales)	Clare Granger	07825 374892
CRRT Account Manager (S West / S Wales)	Nick Price	07825 374870
CRRT Clinical Specialist (S West / S Wales)	Sharon Dare	07825 366176
CRRT Account Manager (London / S East)	Bob Rayit	07825 365990
CRRT Clinical Specialist (London)	Hayley Duncombe	07825 374861
CRRT Clinical Specialist (S East)	Theresa Truter	07786 335147
24 Hour CRRT Helpline		07623 945987
Customer Services		01635 206060
Technical Services		0870 609 9100

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