

Three suggestions for 2025 to improve the sustainability of your Hemodialysis center

1. Dialysate flow rate:

The dialysate flow rate is pivotal for the water and energy used during a dialysis session. The rate should be adjusted according to the dialysis form (HD versus HDF). For HD the dialysate flow (QD) to blood flow (QB) should be 1:2 to 1 (QD about 500, depending on QB).

HDF (hemodiafiltration) should be used when the blood flow is generally ≥ 350 ml/min. In HDF, a dialysate of 600 ml/min can be used. These adjustments require a specific analysis of each machine to ensure compliance with current standards and are filter dependent. Therefore, measure Kt/V a month after adjustment to ensure dialysis quality.

2. Machine activation

Machine activation should be aligned with patient arrival in sequence to avoid unnecessary use of energy and dialysate. This would allow machines to remain off until they are needed. We suggest using automatic energy-saving standby mode and reduced Flow (e.g. Eco Flow Mode) during the preparation phase if not immediately used. Flow should not be switched off for prolonged waiting time as there is a risk of a risk of bicarbonate failure (flocculation / Ausflocken).

For backup machines not in use, it is crucial to establish a disinfection protocol that takes these Stops into account. These machines may remain off but should be powered on for disinfection every 72 hours, in line with supplier guidelines to maintain the microbiological quality of the system.

3. Water preparation and heat cycles

Have the water supply being evaluated by the supplier. For water treatment, the number of heat cycles and the heat time must be analyzed in correlation with the so-called A0 factor, which is a key measure to ensure effective disinfection.

By optimizing the A0 value, we can:

- Reduce energy requirements for water treatment
- Reduce water quantities
- Ensure microbiological disinfection that meets standards

Each supplier must validate the numbers and optimize the applicable A0 value for their system, enabling precise calculations of contact time and the dynamization of the water loop.

For all suggestions of our group dialysis quality and patients' safety are priority issues. Interact with you provider and sent questions to the Sustainability or the Dialysis working group.

This list of suggestions is based on the opinions of the members of the Working Group for Sustainable Nephrology of the Swiss Society of Nephrology. Suggestions for improvement are welcome (please sent them to office@swissnephrology.ch ("Sustainable Nephrology)).

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