

Nurse's role in optimizing the extracorporeal anticoagulant regime.

Carina Gonçalves¹, Elisa Amaral¹, Fernanda Gomes¹, Bruno Pinto², Ricardo Peralta², João Fazendeiro Matos²

¹Fresenius Medical Care, NephroCare Vila Franca de Xira, Vila Franca de Xira, Portugal

²Fresenius Medical Care, NephroCare Portugal, Porto, Portugal

Introduction

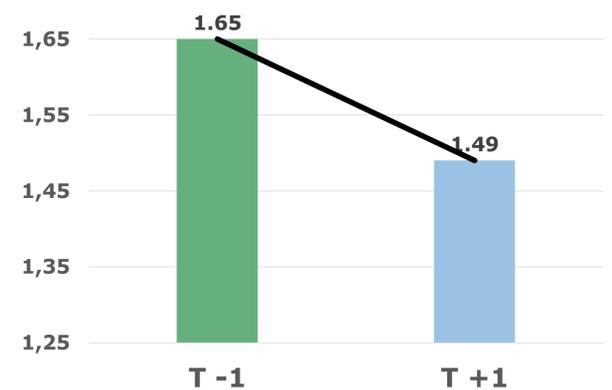
Control of blood losses in the Extra Corporeal Circuit (ECC) at the end of treatment should be a permanent concern for maintaining haemoglobin and haematocrit values in dialysis patients, with a consequent impact on quality of life, also leading to a better cost efficiency/treatments.

Objectives

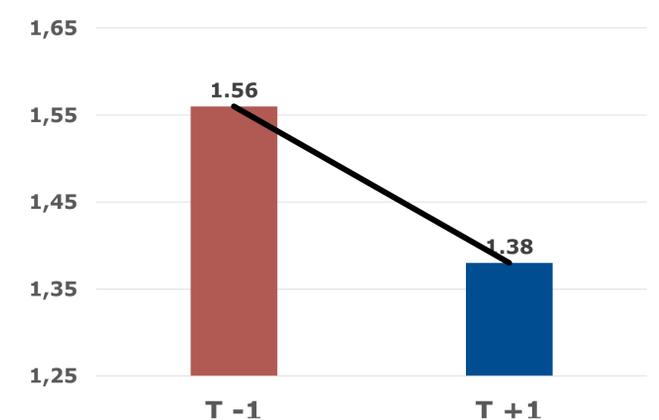
To understand the influence of the heparin dose and of its delivery distribution along the treatment on the appearance of the ECC at the end of the treatment and the consequent blood loss.

Methods

- Prospective, observational, descriptive study.
- 74 patients on post-dilution Online Haemodiafiltration (OL_HDF), with internal vascular access, with heparin as anticoagulant and visual ECC coagulated aspect at the end of treatment were enrolled.
- In 58 patients (group I) we increased total heparin dose.
- In 16 patients (group II) we maintained the total heparin dose but decreased the initial bolus.
- The day of the change was not considered.
- 2 weeks before (T-1) and 2 weeks after (T+1) after changing the heparin prescription were analysed.
- 2 categories were defined to categorize both Dialyzer and Bloodlines:
 - Dialyzer: 1. Clean/< 10% clotted fibres; 2 \geq 10% clotted fibres;
 - Bloodlines: 1. Clean; 2. Clots.
- ECC's visual aspect was assessed at patient's bedside.
- The overall score for visual aspect in ECC was obtained when per each period [(T-1) and (T+1)] at least 60% of treatments were classified in the same category. Mean score for both categories was calculated.



Graph 1. ECC's aspect Visual Score in both periods in Group I.



Graph 2. ECC's aspect Visual Score in both periods in Group II.

Results

In relation to the visual aspect, the overall score decreased from the first to the second period in both groups, meaning that both interventions had a positive impact.

In Group I from T-1 (before) to T+1 (after intervention) the overall score decreased from 1.65 to 1.49. In Group II, it decreased from 1.56 to 1.38.

Conclusion

In both groups, we observed a positive impact in the ECC visual appearance, especially in Group II.

HDF treatments in post-dilution show a tendency towards haemoconcentration, and it is the nurse's role to continuously assess ECC for clothing risk, document the events and communicate the findings inside the multidisciplinary healthcare team, in order to positively contribute to improve the heparin management, leading to better patient outcomes.

References

1. Tomas, Nicola (2005) – Hemodiálise. In: Tomas, Nicola – Enfermagem em Nefrologia. 2ª edição. Loures: Lusociência, 2005. ISBN: 972-8383-85-1.
2. Daugirdas, John T., Peter Gerard Blake, and Todd S. Ing, ed4. Handbook of dialysis. Vol. 236. Lippincott Williams & Wilkins, 2007. ISBN 978-0-7817-5253-4
3. McGrogan, Damian G., et al. "Current tools for prediction of arteriovenous fistula outcomes." Clinical kidney journal 8.3 (2015): 282-289; <https://doi.org/10.1093/ckj/sfv019>
4. Fazendeiro Matos, J. et al, Impact of heparin doses on patient treatment outcomes, Nephrology Dialysis Transplantation, Volume 32, Issue suppl_3, 1 May 2017, Pages iii625, <https://doi.org/10.1093/ndt/gfx175.MP536>