

Haemodialysis plastic cannulae seem to be an optimal choice for some patients

Rui Sousa¹, Pedro Goncalves¹, Jorge Melo¹, Sandra Campos¹, Andreia Silva¹, Ricardo Peralta², João Fazendeiro Matos²

¹Fresenius Medical Care, NephroCare Viseu, Viseu, Portugal,

²Fresenius Medical Care, NephroCare Portugal, Porto, Portugal

Introduction

Plastic cannulae have been used in Japan for over 20 years in approximately 300,000 patients on dialysis three times a week with very few adverse outcomes reported. The main advantage seems to be the reduced risk of internal vessel wall damage. However, their studies also showed that cannulation with plastic cannulae is more difficult than with traditional metal needles. The main barrier appears to be the higher costs as compared to metal needles.

Objectives

- To demonstrate that plastic cannulae can be an alternative to metal needles for AVF cannulation in patients with metal allergy.
- To explore the advantages of these cannulae using the best cannulation technique.

Methods

This is a case study of a 34 old female patient with nickel allergy. We had to find an alternative to continue using the AVF and started cannulating with the Monoflux[®] 14G a plastic cannulae of Vygon. In March 2017 we changed to Supercath[®] 16G by Medikit. Allergic signs and pain perception were assessed.

Results

After the first allergy symptoms we had to change the cannulation technique from buttonhole to rope-ladder, and began cannulating the AVF with the Monoflux[®] 14G. Skin reactions disappeared after one week with the new method. After two months the dialysis outcomes obtained were better, in particular with the blood flow, Kt/V, and substitution volume. Pain perception decreased from 5 with buttonhole to 1 with rope-ladder and plastic cannulae. The major disadvantage was the high number of haematomas. Despite the good results we changed the cannulae to Supercath[®] 16G, because of its technical superiority. With this change we extended our investigation to 9 more patients with AVF exhibiting redness and rush on the cannulation sites. Beyond this modification we tried to maintain the MuST cannulation technique in these patients.

Conclusion

Plastic cannulae are an alternative to cannulate AVFs providing a successful long-term cannulation technique, requiring a certain degree of expertise and training of the clinical staff. However, plastic cannulae are not user friendly and still require certain improvements by the manufacturer. Perhaps the biggest change in cannulation practices to date is the introduction of plastic cannulae for haemodialysis.

References

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Figure 1: Monoflux[®] 14G (Vygon) and Supercath[®] 16G (Medikit)



Figure 2: Left radio-cephalic AVF using the Monoflux[®] 14G



Figure 3: Left brachial-cephalic AVF using the Supercath[®] 16G