



Comparative Analysis: Effects of Heparin versus Sodium Bicarbonate on Double-Lumen Catheter Removal Rate and Cost Savings in Hemodialysis



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INTRODUCTION

The most used temporary vascular access for hemodialysis is the double-lumen catheter, whose main complications that determine its removal are infection and obstruction due to thrombosis. Heparin is the most commonly used solution to seal the catheter, although its cost is considerably higher than that of sodium bicarbonate solution, which is also indicated for this purpose.

The objective of this study was to perform a comparative analysis of duplo-lumen catheter removal rates and costs before and after implementing the use of sodium bicarbonate as a seal in a hemodialysis unit.

METHODS

Retrospective study. As a data source, monthly records of vascular devices were used, which contained information such as: type of vascular catheter, date of insertion, date of removal and reason.

Data regarding the prevalence of withdrawal and reasons for two periods were compared: with the use of heparin between August 2017 and December 2018 and between August 2022 and December 2023 with 8.4% sodium bicarbonate solution as an alternative.

RESULTS

In the first period with heparin, of the 239 records analyzed, the predominant reason for removing the device was lumen obstruction, which represented 27.6% (n=66), followed by a diagnosis of infection, representing 18.8% (n=45); In the second period with bicarbonate solution, all 189 records were analyzed, where the prevalence of removal due to obstruction was 29.6% (n=50) and 6.34% (n=12) due to infection. In relation to the total cost over the 15-month period, the reduction was 92%, representing a saving of approximately US\$ 3,261.00.

CONCLUSION

These findings suggest that sodium bicarbonate may be a viable and safe alternative to heparin for sealing double-lumen catheters, offering significant economic benefits.

Considering the current scenario of increasing costs in healthcare, the adoption of strategies that provide savings without compromising the quality of care is of paramount importance. Therefore, the implementation of alternative solutions, such as sodium bicarbonate, deserves to be considered and evaluated in other healthcare institutions.

