In this study, catheter malfunction rates using recombinant tissue plasminogen activator (rt-PA) vs heparin for locking CVC between apheresis procedures were compared" Mathur et al (2019).

Abstract:

BACKGROUND: Central venous catheters (CVCs) for apheresis procedures require regular locking/flushes to maintain adequate flow rates. Literature comparing locking solutions for apheresis, where the time interval between procedures can be longer than for hemodialysis (many days to weeks), is lacking. In this study, catheter malfunction rates using recombinant tissue plasminogen activator (rt-PA) vs heparin for locking CVC between apheresis procedures were compared.

STUDY DESIGN AND METHODS: A retrospective review of 93 extracorporeal photopheresis procedures in 10 patients was performed at our institution. About 1000 U/mL heparin or 2 mg rt-PA was used as the locking solution. Heparin locks were changed at least once per week and rt-PA locks could be left in place for up to 4 weeks. Following these locks, inadequate blood flow noted on accessing CVC and/or during the procedure was scored on as: no issues, some issues, or significant issues. Binary logistic regression was used to evaluate for potential statistical difference in outcomes. Cost analysis was also performed.

RESULTS: No statistically significant difference was noted in outcomes between heparin and rt-PA lock (P value = 0.15). Total cost of heparin lock administration ($91-$362.50) was found

to be more than rt-PA lock ($76) when more than one flush was needed between procedures.

CONCLUSIONS: For apheresis use, rt-PA and heparin CVC locks seem to have similar outcomes in preventing CVC malfunction. The convenience of not needing any flushes between procedures and overall cost of administering fewer locks favors rt-PA use when the interval between procedures is >7 days.

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Intraosseous administration of Tissue Plasminogen Activator
Taurolidine-citrate-heparin lock reduces catheter-related bloodstream infections
Sodium bicarbonate catheter lock solution reduces hemodialysis catheter loss

Reference:
Mathur, G., Mott, S.L., Collins, L. and Schlueter, A.J. (2019) Tissue plasminogen activator vs heparin for locking central venous catheters between apheresis procedures. Journal of Clinical Apheresis. March 4th. .

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