Abstract

A Survey of TPA Usage in Canada for Hemodialysis Central Venous Catheter Malfunction

Lam E, Kosa S, Goh ST, Lok C

Toronto General Hospital, 200 Elizabeth Street, Toronto, Ontario, M5G 2C4.

Introduction:
Many hemodialysis patients worldwide receive dialysis via central venous catheters (CVC). A major cause of CVC malfunction is intraluminal thrombosis which decreases or stops the blood flow through the catheter. Tissue Plasminogen Activator (TPA) is a thrombolytic agent that has been shown to be effective in treating and preventing CVC thrombosis.

Method:
151 dialysis centres across Canada were surveyed using a standardized questionnaire via email and telephone to identify the patterns of TPA usage from April 1, 2012 date to August 31, 2012 date. Dialysis centres were contacted twice in follow-up if there was no response to the original survey sent.

Results:
Fifty-two dialysis centres completed the survey. 92.31% of 52 centers used citrate as the inter-dialytic catheter locking solution while 36.54% of the surveyed centers used heparin. All respondents reported using "failure of conservative methods" as an indicator for TPA administration.

While 96.15% of centres reported using 'sluggish blood flow' as an indicator for TPA administration, there was considerable variation in the minimum threshold for that blood flow: 38.46% of centres were using <300, 36.54% of centres were using <250, and 15.38% of centres were using <200.

The 2 mg dose of TPA was used by 60.78% of the surveyed dialysis units across Canada for treatment of suspected intraluminal thrombosis, compared to 39.22% of units using 1 mg dose. Of note, the province of Quebec reported that 73.33% of dialysis centers use a 2 mg dose.

Conclusion:
The lack of consensus surrounding the minimum blood flow threshold before TPA is indicated suggests that the area requires further research and knowledge translation activities.

Table 1: Indications for TPA administration

Indication for TPA Administration	% of centres
Failure of Conservative Methods	100.00%
Sluggish blood flow	96.15%
Increase arterial alarm beyond limit	67.31%
Frequent arterial alarms	75.00%
Dialysis prescription not met	72.00%
Anticipating next Dialysis to be difficult or not possible	80.77%