AN EVALUATION OF ALTEPLASE PRACTICES IN HEMODIALYSIS PATIENTS WITH OCCLUDED CENTRAL VENOUS CATHETERS

Kristen Nelson, BScPharm; Dan Martinussen, BScPharm, ACPR, PharmD

Results

Characteristics of Hemodialysis Patients:

Figure 1: Proportion of patients with each of the different vascular access

Figure 2: Proportion CVC patients receiving alteplase, N=65

Reason for Continued CVC Use:
- Failed AVF/AVG N=5
- Patient Awaiting Access DR N=6
- Patient Awaiting Access Maturation N=2
- Permanence N=5
- * OR = Operating Room

Characteristics of Patients Receiving Alteplase:

Figure 4: Proportion of each alteplase administration method used when alteplase given, N=368

Figure 5: Proportion of alteplase usages associated with arterial & venous lines being reversed at administration, N=368

Figure 6: Distribution of hemoglobin levels at time of alteplase administration, N=368

Figure 7: Proportion of alteplase usages administered to patients with large upper bodies, N=368

Figure 8: Proportion of alteplase usages associated with an INR < 2 and INR 2-3, regardless of warfarin use, N=368

Figure 9: Proportion of alteplase usages associated with an INR < 2 and INR 2-3, in those taking warfarin, N = 195

Comparison to VIHA Protocol:

Table 1: Breakdown of alteplase use by number of administrations

Cost

Figure 10: Yearly cost of alteplase & number of patients with CVCs

Discussion

- Significant drug costs are being used to maintain CVC patency
- CVCs are the predominant method of vascular access for dialysis
- Study findings are hypothesis generating and warrant further research
- Suggestions for future research through randomized controlled trials include making comparisons between:
  - Hemoglobin levels on frequency of alteplase administration
  - Upper body size on frequency of alteplase administration
  - Therapeutic or patency INRs on frequency of administration
- The three methods of administration (dwell, push/pause, infusion) to determine which one results in longest catheter patency

Conclusions

- Significant drug costs are being used to maintain CVC patency
- CVCs are the predominant method of vascular access for dialysis
- Study findings are hypothesis generating and warrant further research
- Suggestions for future research through randomized controlled trials include making comparisons between:
  - Hemoglobin levels on frequency of alteplase administration
  - Upper body size on frequency of alteplase administration
  - Therapeutic or patency INRs on frequency of administration
- The three methods of administration (dwell, push/pause, infusion) to determine which one results in longest catheter patency

References available on request