Introduction/Abstract

**Purpose/Design:** Currently the commercially available product alteplase (ATP) 2mg is indicated for the restoration of function to an occluded central venous access device (CVAD) as assessed by the ability to withdraw blood. The pharmacy and vascular access team met to determine if a lower dose could achieve the same outcome. A review of the literature revealed in multiple studies that a lower dose may in fact be just as successful in restoring function to an occluded catheter.

**Methods:** A dose escalating protocol was implemented with a starting dose of .5mg/ml. Doses would increase to 1mg then 2 mg if the catheter occlusion could not be resolved. The pharmacy mixed all doses and provided ATP in labeled syringes.

**Results:** During a seven month period 738 catheters were placed, 470 CVC and 268 PICC. The same time period resulted in 148 attempts to restore function to the catheters. Comparative data was pulled retrospectively from the same time period one year earlier, 709 catheters placed, 467 CVC, 242 PICC and 119 restoration attempts. **Limitations:** The pilot did demonstrate a lower overall quantity of ATP use. By utilizing an escalating dose the quantity of ATP decreased compared to the indicated dose of 2mg. Also identified was an increase in restoration attempts. The pilot although very limited demonstrated any savings in ATP pharmacy expense may be offset by increased labor expense from pharmacy preparation time and vascular access team repeat dosing time combined.

Conclusion

**Conclusion:** The pilot did demonstrate a lower overall quantity of ATP use. By utilizing an escalating dose the quantity of ATP decreased compared to the indicated dose of 2mg. Also identified was an increase in restoration attempts. The vascular access team restoration attempts increased by 20% compared to the previous time period. This pilot therefore limited demonstrated any savings in ATP pharmacy expense may be offset by increased labor expense from pharmacy preparation time and vascular access team repeat dosing time combined.

References:

Low Dose Alteplase for Catheter Occlusion Clearance

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Figure 1: Reconstituted ATP
Figure 2: 1st escalation dose
Figure 3: 2nd escalation dose
Figure 4: Manufacture recommended dose