

Self Care and Blood Drawing Practices May be Predictors for Central Venous Access Device Longevity in a Home Parenteral Nutrition Population.

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Background

A central venous access device(CVAD) is required for home parenteral nutrition(HPN) administration. Commonly used CVADs for HPN are tunneled catheters, infusion ports, and percutaneously inserted central catheters(PICC). Consumers may require HPN for many years, so CVAD maintenance is a priority.

Objective

The aim of this survey was to determine CVAD history and if self care and blood drawing practices in an HPN population affect CVAD longevity.

Methods

A multiple choice survey was mailed to all HPN consumers from one home infusion provider. Questions included years of HPN, number and duration of CVADs, caregiver information, and blood drawing practices. Returned surveys were divided into two groups based on CVAD duration. Group 1 retained at least one CVAD for 0 through 5 years and Group 2 for 6 or more years. Groups 1 and 2 were compared by statistical analysis using Student's t-test and Chi-square with $p < 0.05$ considered significant.

Results

Ninety four surveys were returned. Group 1 and Group 2 had 46 and 48 surveys respectively. Females represented in Group 1 (71.7%) and Group 2 (62.5%). The average age in Group 1 vs. Group 2 was 42 years (range 2-78 years) vs. 51 years (range 17-73 years; $p=0.03$). The average duration of HPN for Group 1 was 9 years (range 0.5-26 years) vs. Group 2 with 21 years (range 5-34 years; $p=0.04$). Patients in Group 1 maintained a single CVAD for an average of 2.67 years and Group 2 for 10.58 years ($p < 0.001$). Group 1(65.2%) delivered less self care for infusion related tasks (admixing, connect, and disconnect) than Group 2(91.7%; $p=0.002$). This was also true for CVAD site and dressing care (58.7% vs. 89.6%; $p=0.001$). Blood was drawn more often by venipuncture in Group 2 vs. Group 1(72.9% vs. 41.3%; $p=0.002$). Blood draws via the catheter were more frequent in Group 1 vs. Group 2 (60.9% vs.35.4%; $p=0.014$). Group 1 had more frequent blood draws than Group 2: weekly(15.2% vs. 0%; $p=0.003$), and monthly(37.0% vs. 12.5%; $p=0.006$). Group 2 had more blood draw intervals greater than one month than Group 1(29.2% vs. 19.6%; ns).

Conclusion

This survey confirms that patients receiving HPN can maintain the same CVAD for many years. Self care limits CVAD exposure to multiple handlers which may contribute to

CVAD longevity. Frequent blood draws from a CVAD may increase incidence of CVAD dysfunction leading to removal. Venipuncture rather than catheter blood draws and less frequent lab monitoring are associated with longer CVAD life in this cohort of HPN patients. These factors may be predictors for CVAD longevity.