Using a Permanent Catheter Permanently

Abstract

Background: The majority of patients who suffer from end-stage renal disease (ESRD) receive renal replacement therapy (RRT) via hemodialysis (HD). The arteriovenous fistula (AVF) is the preferred vascular access to facilitate circulation of blood out of the body for mechanical filtration and return of cleansed blood. In a small proportion of HD patients, the insertion of AVF or a synthetic graft (AVG) alternative could become extremely difficult. The remaining viable alternative in these patients is to permanently use a central venous catheter (CVC). The challenges linked with CVCs comprise the delivery of adequate flow, prevention of infection, prevention of venous stenosis and thrombosis, and prevention of the omnipresent fibrin sheaths that interfere with flow, resulting in higher morbidity, more frequent complications and hence higher costs.

Significance: This study will evaluate the morbidity and mortality ramifications of patients using a CVC for HD therapy. The results will help better understand the clinical foundation for total loss of fistula function, outcomes linked with permanentlyusing a CVC, and hence develop an informed catheter usage management strategy and recommendations.

Methods: This is a prospective cohort study which will evaluate historical and prospective data in prevalent adult HD patients, utilizing a permanent catheter permanently (PCP).Two cohort groups of patients will be enrolled and compared:
Group-1: HD Patients who start usingPCP between January 1, 2013 and December 31 2013.
Group-2: HD patients using AVF for HD during the same period, matched to patients in group-1 for center, age (+/- 5 years) and gender.
Day 0 for a patient in cohort group-1 is the date of first use of PCP, and the same for the matched patient in cohort group-2. One year historical data prior to day 0 will be collected, as well as prospective data of upto two years. Over 30dialysis centers across Lebanon will be approached to enroll their PCPpatients and their matches in order to recruit a totalsample of at least 120 consenting patients per group.
Patients will be followed up monthlyfor the first 6 months and every 6 months thereafter, until death or two years, whichever comes first. A patient may exit the study due to mortality, transfer to a non-participating dialysis center, studywithdrawal, transplantation or end of the follow-up period. Demographic, clinical, laboratory and outcomes data will be obtained from the national kidney registry data and compared. Quality of life, detailed comorbidity profile and vascular access maintenance details will also be assessed.

Interpretation of Results*:* Understanding the clinical circumstances and outcomes of PCP is necessary to improving the outcomes of these patients. Such information will facilitate the adoption of a national preventative and therapeutic recommendations and guidelines necessary to tackle these cases.