P357

P357- Short frequent haemodialysis at home does not appear to be associated with accelerated loss of residual renal function

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Background:

The importance of preserving residual renal function (RRF) in dialysis patients has long been recognised with benefits seen in terms of survival, nutrition and biochemical parameters. Frequent nocturnal haemodialysis (FNH) may accelerate loss of RRF but the effects of short frequent haemodialysis (SFHD) are less clear.

Comparing rate of loss of RRF between SFHD and conventional in-centre haemodialysis (ICHD) is not straightforward. Patients who commence SFHD have typically already had ICHD for a period of time, unlike ICHD patients who often commence dialysis de-novo. Consequently, a problem of lead-time bias exists. To overcome this, we studied rate of loss of RRF in our cohort of home SFHD patients, comparing to vintage matched thrice-weekly ICHD patients.

Method:

We identified 2 cohorts of patients at our centre both of whom had intermittent measures of residual renal urea clearance (KrU).

The SFHD cohort comprised patients initiating SFHD at home between 2009 - 2017. A separate control historical cohort of ICHD patients was used of those commencing dialysis 1989-2009.

Time since HD initiation (vintage) was calculated for the SFHD cohort. Each patient was matched against 3 patients in the ICHD control cohort for KrU (±0.5ml/min) at the equivalent vintage (±6 months). Only KrU data after SFHD initiation was used in the SFHD cohort, and from the equivalent vintage time in matched controls.

We compared trajectories of KrU decline in both cohorts, correcting for potential confounding variables.

Results:

1073 patients were in the control cohort and 84 patients in the SFHD cohort. 24 patients on SFHD had ≥2 KrU measures following initiation but only 22 patients could be matched with 66 control patients according to the above criteria.

The median duration of dialysis for patients on SFHD was 165min/session (IQR 150-180min). KrU at SFHD initiation was 2.3ml/min (IQR 1.3-5.4) in the SFHD group and 1.7 (IQR 1.0-4.9) in the control group, p=0.25.

Patients in the SFHD group were younger than control patients at the equivalent vintage time (50±SD 17 v 64±SD14 years, p<0.001). Gender mix was similar (control 73% male, SFHD 63% male, p=0.42). There was no

significant difference in frequency of diabetes, cardiac disease or peripheral vascular disease between SFHD and control ICHD patients (Table 1).

Slope of decline in kidney function was -0.76ml/min/yr (IQR -1.8 to 0.1) in the SFHD group and -0.43 (IQR -1.2 to -0.1) in the ICHD control group (p=0.60 Mann-Whitney U Test). Using multiple linear regression to determine predictors of slope of decline in KrU, neither group (SFHD or in-centre HD) nor age or gender were independent predictors of KrU slope.

Conclusion:

We did not find evidence that SFHD at home was associated with an increased rate of decline in RRF. Patients with RRF on home HD might benefit from SFHD rather than FNH but this needs further exploration.