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P134 -Does peritoneal dialysis vintage affect relative leucocyte telomere length; a novel biomarker of ageing and mortality?

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INTRODUCTION AND AIMS: Leucocyte telomere length (LTL) is an emerging novel biomarker of ageing and survival. Oxidative stress and chronic inflammation have been associated with progressive telomere loss. Telomere shortening to a critical limit is associated with replicative senescence and cell death. Current data in peritoneal dialysis (PD) cohort suggests that adjusted all-cause mortality is associated with dialysis vintage. All the current literature on LTL and dialysis vintage has been investigated in haemodialysis patients with conflicting results but none have reported LTL outcomes in PD cohorts. The aim of our study was to investigate if PD vintage is associated with LTL and 1-year mortality outcome.
METHODS: We conducted a single centre prospective cohort study. All eligible PD patients who have been established on dialysis were recruited and blood samples taken as per study protocol. Whole blood was immediately isolated for peripheral blood mononuclear cells which were analysed for relative telomere length (rTL) by quantitative real-time polymerase chain reaction (rt-PCR) according to a modified Cawthon protocol. rTL was expressed in the form of T/S ratio. Baseline demographic data, dialysis vintage and mortality outcomes were obtained from the electronic patient record.
RESULTS: A total of 105 patients (68 male, 37 female) were recruited from May 2016 to February 2017. Age ranged from 23 to 82 with a median age of 56. Dialysis vintage for this cohort ranged from 7 to 547 weeks with a median of 81 weeks. Mean rTL reported as T/S ratio in this cohort was 2.136. Mean C-reactive protein, a marker of inflammation was 8. (normal <5). rTL was inversely associated with age. ($r = -0.443$, $p < 0.01$). rTL was also increased in women in comparison to men and this was statistically significant. ($p=0.044$) Correlation between dialysis vintage and rTL approached statistical significance, however this association was diminished when adjusted for age and sex. ($p= 0.060$) rTL had no correlation with all-cause mortality outcome in this cohort. ($r= -0.168$, $p=0.088$). We were unable to show any significant association between dialysis vintage with 1-year mortality outcome. ($p= 0.073$)
CONCLUSIONS: To our knowledge, this is the largest study in a PD cohort investigating the role of LTL and dialysis vintage. Our findings revealed that no association was found between dialysis vintage in PD patients and rTL; a biomarker of ageing and mortality. A hypothesis to explain the lack of association when compared to some of the haemodialysis literature is that excess accumulation of oxidative products and inflammation is less in PD cohort in comparison to haemodialysis cohort due to the nature of the dialysis modality. Larger, longer term studies looking at rTL in both haemodialysis and peritoneal dialysis modalities are warranted to validate the findings of this study.