

## Effect of frailty and comorbidity in pre-dialysis population

Dr Haroon Ayub<sup>1</sup>, Dr Rauri Clark, Dr James Andrews, Dr Shalabh Srivastava, Dr Saeed Ahmed

<sup>1</sup>South Tyneside And Sunderland NHS Foundation Trust, Sunderland, United Kingdom

### Introduction

Chronic kidney disease (CKD) has a global health burden and is defined as either decreased kidney function shown by glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m<sup>2</sup>, or markers of kidney damage, or both, for at least 3 months duration, regardless of the underlying cause. Frailty is usually defined as a state of accelerated vulnerability to physical stressors, including illness and trauma along with sarcopenia, weakness and decreased endurance. Frailty is associated with adverse clinical outcome and poor prognosis as a whole. This is due to progressive decline in the physiological systems accompanied by detrimental psychological health and limited social care. Rockwood frailty index is the most widely used clinical tool to diagnose frailty. Frailty is fairly common in CKD population and is associated with worse clinical outcome. Comorbidities play a vital role in the management and prognosis of patients with renal impairment. These comorbidities can be either presented separately or collectively in the form of a score that represents the burden as a whole. The Charlson comorbidity index (CCI) first published in 1987 utilizes sixteen comorbidities of varying weightage depending upon their strength of association with mortality. This study was done to evaluate the effect of frailty and comorbidity on pre-dialysis population.

### Methodology

All patients with chronic kidney disease having GFR <20ml/min/1.73m<sup>2</sup> are referred to Low Clearance Clinic (LCC), where a team of nephrologists and nurses work in a multi-professional clinic for patient centred care. Nurse lead patient education clinics are also undertaken to help patients make informed choice. Patients being referred to LCC for the first time or transferring from LCC to other clinics (Dialysis, transplant or conservative care clinics) or dying during the period from October 2018 to October 2019 were enrolled in the study. A total of 132 patients fulfilling these criteria were included in the cohort. Baseline demographics, choice of mode of renal replacement therapy, permanent vascular access formation, dialysis catheter insertion and venous mapping were recorded using electronic MEDITECH hospital software. CCI and CFI were calculated on referral to LCC and comorbidity burden was transcribed from the hospital electronic medical records.

### Results

27.27% (n=32) of the total population died during the study period with a mean duration of length of follow up in LCC being 363 days (ranging from 23 to 1716 days). Thus, the cohort was divided into 2 groups; 96 patients in the alive group and 36 in the deceased group. There was statistically significant difference in CFI and CCI between both the groups as shown in table 1.

### Conclusion

CFI and CCI scores are simple clinical tools that are predictive of mortality in CKD patients in low clearance/pre-dialysis clinics and can be used objectively in informed decision making for suitability for renal replacement therapy. Both CFI and CCI can be integrated into the EMR allowing real time assessment in this Real world study.