*Background*:

Both frailty and acute kidney injury (AKI) are independently associated with an increased risk of morbidity and mortality. An individual’s degree of frailty can be assessed by the Clinical Frailty Score (CFS). The aim of this study was to assess if an individual’s CFS was associated with AKI in acute elderly medical admissions and to observe the short-term outcomes in this population.

*Methods*: This was a single-centre prospective observational cohort study conducted at a tertiary London teaching hospital. All patients aged 65-years and over admitted under an unselected acute medical take over 12 non-consecutive days were included. Patient demographics, co-morbidities, baseline CFS, AKI status, and medication on admission were recorded. Outcomes of death, length of stay and hospital re-attendance were assessed two weeks following admission.

*Results*: Of 164 patients (77 males) 19% had AKI on admission and 22% were considered severely frail. Severe frailty was significantly associated with AKI (*p*=0.01, RR 2.25, 95% CI 1.21-4.18) and death within two-weeks (p=0.01, RR 4.44, 95% CI 1.26-15.7). Neither AKI nor severe frailty were associated with increased length of stay or re-attendance to hospital in follow-up. Two-week mortality was highest amongst patients with both severe frailty and AKI (36%).

*Conclusion:* Patients deemed ‘severely frail’ are more likely to present with AKI when admitted acutely to hospital and have a significantly worse short-term mortality. The CFS may be useful in acute illness to guide clinical decisions in elderly patients. Further research is required to establish long-term outcomes