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## P154 -The incidence of neurocognitive disorders in the BETSI-COG-CKD study; initial findings from this longitudinal investigation.

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### Introduction:

Neurocognitive disorders (NCD) which include mild cognitive impairment (MCI) and dementia are rising as population's age throughout the world. Chronic kidney disease (CKD) which affects nearly 9% of global populations is strongly associated with older age, increased cardiovascular risk, diabetes, hypertension and stroke, which are all strongly associated with the development of cognitive impairment. We have recently reported the baseline outcomes of our older adult cohort with mild to moderate CKD (stages 3-4) and diabetes, where 48% had a NCD, ranging from mild to severe symptoms. [1] This study reports the crude prevalence and incidence of NCD's in the first 48/92 patients who at baseline were considered to have normal cognitive function.

### Methods:

Cognitive function was assessed in patients over aged 55 years, with an estimated glomerular filtration rate < 45ml/min/1.73m<sup>2</sup>, who attended a renal and diabetes outpatient clinic. A diagnosis of NCD was based upon patient and informant interview, case note review, neuropsychological assessment and application of Diagnostic and Statistical Manual of Mental disorders version 5 (DSM-V) and Petersen's criteria for MCI. The incidence of NCD was calculated by dividing the number of new cases (NCD) during study follow-up, by the person-time at risk through out the observation period. Since it is not possible to precisely determine when a person actually develops a NCD between baseline and follow-up, the midpoint of time between having normal cognition and becoming a case is assumed.

### Results:

Forty eight patients without cognitive impairment at baseline were included in this investigation (mean age of 76.6, 23 male and 25 female). Cognitive assessment and application of DSM V criteria revealed that 13/48 (27%) had a NCD ranging from mild (n=9) to major symptoms (n = 4). The crude prevalence for mild-NCD (n = 9) was 18.7% and for major-NCD (n = 4) it was 8.3%. The total person years in the study were 85.1, with an overall incidence rate of 15.3 per 100 patients developing a NCD per year. The incident rate for mild-NCD was 10.6 and for major-NCD it was 4.7.

### Conclusions:

This investigation builds on our previous cross sectional investigation where significant proportion of our baseline cohort had cognitive impairment ranging from mild to major symptoms. The crude prevalence in the current investigation for the development of a NCD was 27%. The overall incidence rate for new cases of NCD was just over 15%. In other words for every 100 patients in our current investigation we would estimate that around 15 will develop some form of cognitive impairment per year. Our findings suggest that CKD patients' cognitive function should be screened and monitored routinely in clinical practice. This will assist with appropriate health service planning, service development, clinical interventions and the assessment of the effectiveness of new and existing services.