

# Don't forget about cognitive impairment (CI) in the renal dialysis unit! How common is it and how accurate is staff perception about it?

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## AIMS

Pragmatic project aiming to assess:

1. prevalence and severity of cognitive impairment on the renal dialysis unit
2. accuracy of renal dialysis staff perceptions of their patients' cognitive impairment (CI)

## HYPOTHESIS

- CI is highly prevalent but significantly underestimated by renal staff in dialysis unit.
- Therefore, routine CI screening and training in renal dialysis units, is necessary to ensure CI is detected and managed appropriately.

## BACKGROUND

- Within the renal dialysis population, disproportionately high CI is well documented and a number of aetiological factors are cited<sup>1</sup>.
- This is important because cognitive function is required for good self care for complex long term conditions<sup>2</sup>. CI is associated with greater mortality in renal disease<sup>3</sup>.
- Behavioural and psychological symptoms of dementia may also make dialysis and transport to and from dialysis challenging for the person with End Stage Renal Failure (ESRF), their loved ones and the professionals supporting them.
- But, it is not routine practice to assess the cognitive function of people with ESRF within the Imperial College Healthcare NHS Trust dialysis unit in North West London.

## METHODOLOGY

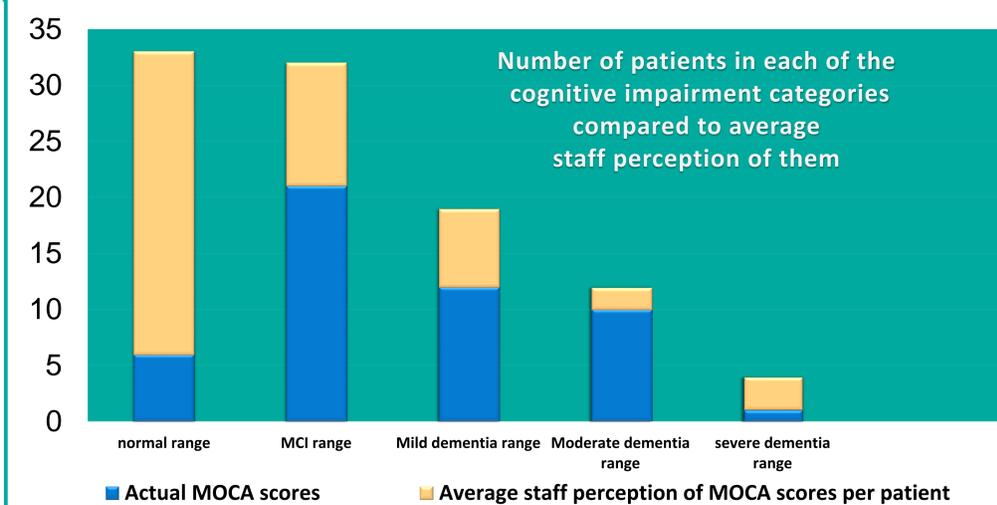
The project was conducted in summer 2019.

1. Three medical students were trained to conduct the Montreal Cognitive Assessment (MOCA) and evaluated for accuracy against the first author's assessment.
2. Electronic patient records (EPR) were searched for radiological evidence of brain disease and of a pre-existing diagnosis of mild cognitive impairment (MCI) or dementia.
3. All staff on the dialysis unit were asked for their best guess about the cognitive function of each of the patients on the unit, using a Likert scale of (0=no cognitive impairment, 1=mild cognitive impairment, 2=mild dementia, 3=moderate dementia, 4=severe dementia).
4. These scores were averaged per patient and compared against each patient's actual score.

## RESULTS

### Characteristics of patients and staff

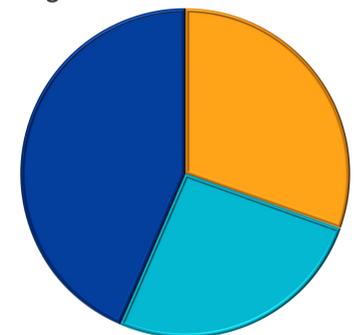
- We assessed 50 patients, mean age 56 yrs, range 18-88 yrs, 60:40 female:male
- We surveyed 12 staff members



### Summary of results

- Staff on average rated that **54%** (27) of their patients had normal cognitive function.
- But in reality, only **12%** (6) of the patients had normal cognitive function.
- So, 88% of patients had cognitive impairment (42 people)
- 42% scored in range of MCI and the other 46% scored within the range for dementia
- Of these 46% (23 people), 10 had had no investigations to explore this, 7 had had brain imaging suggestive of needing further investigation but none had been done

### Investigation and diagnosis of people noted to have cognitive impairment on MOCA testing



- ALREADY HAD DEMENTIA DIAGNOSIS
- HAD IMAGING EVIDENCE OF SMALL VESSEL DISEASE BUT NO Dx
- HAD NO IMAGING AND NO DIAGNOSIS

## CONCLUSIONS . RECOMMENDATIONS & NEXT STEPS

- We found that, in keeping with existing evidence, there is a very high rate of CI in our dialysis unit.
- We have also found that the very skilled renal nurses, who spend many hours per week with these patients, significantly underestimate their patients' cognitive function.
- We suggest that this is likely to lead to poorer care and poorer advanced care planning for dialysis patients.
  - There are many reasons for increased rates of cognitive impairment in ESRF, especially in haemodialysis patients.
  - But cognitive impairment affects one's ability to take on new information about diagnosis, treatment plans, to carry out those treatment plans and stick to renal diets.
- Therefore renal staff need to know what their patients' cognitive function is in order to be able to discuss current treatment and advance care planning with their patients in a meaningful way.
- Staff only over-rated two patients' CI. Both of those patients had chronic psychotic illness. They were both rated as having severe dementia.
- This may suggest that psychotic mental illness and CI are conflated in staff minds and that the level of perceived impairment is related to how challenging the behaviour of the person is perceived to be by staff.
- This is also an area where there has been little exploration and would warrant further investigation to support staff and the people with SMI (severe mental illness).
- We propose that validated cognitive screening (supported by training and pathways) should be conducted prior to renal dialysis enrolment and regularly after that in order to support optimised renal care planning and delivery.
- This is especially vital as there appears to be emerging evidence that Covid 19 and lockdown is contributing to worsening cognitive function.
- We have now established a renal frailty multidisciplinary team to support Imperial Healthcare NHS Trust's renal teams, embed systems to encourage staff behaviour change and discuss procedural changes with management. The same methodology is now being rolled out by the wider group as part of a validation exercise to find an alternative cognitive test in light of MOCA copyright changes.
- The first author is working with Kidney Care UK to develop national guidelines and staff training and as well lobbying NHSE's Renal Services Transformation Programme to embed these changes.

## LIMITATIONS

- The MOCA tests were conducted during dialysis sessions. This could be seen as a limitation as haemodialysis can temporarily reduce cognitive function during the session because of hypovolaemia.
- But most renal staff have discussions with their dialysis patients about treatment, medication, diet and future plans, during dialysis.
- We therefore suggest that this is a reasonable and pragmatic time to test cognitive function as it will provide a better estimation of the level of cognitive function. It would not be the right time to conduct assessment for the purposes of dementia diagnosis however.

## REFERENCES

1. Tian X, Guo X, Xia X, Yu H, Li X, Jiang A. The comparison of cognitive function and risk of dementia in CKD patients under peritoneal dialysis and hemodialysis: A PRISMA-compliant systematic review and meta-analysis. *Medicine (Baltimore)*. 2019 Feb;98(6):e14390. doi: 10.1097/MD.00000000000014390. PMID: 30732180; PMCID: PMC6380759.
2. Santos, T, Lovell, J, Shiell, K, Johnson, M, Ibrahim, JE. The impact of cognitive impairment in dementia on self-care domains in diabetes: A systematic search and narrative review. *Diabetes Metab Res Rev*. 2018; 34:e3013. <https://doi.org/10.1002/dmrr.3013>
3. McAdams-DeMarco MA, Daubresse M, Bae S, Gross AL, Carlson MC, Segev DL. Dementia, Alzheimer's Disease, and Mortality after Hemodialysis Initiation. *Clin J Am Soc Nephrol*. 2018;13(9):1339-1347. doi:10.2215/CJN.10150917