

It's like walking in a bubble: Cognitive Impairment as a Long-Term Concern for Kidney Transplant Patients

Nader Aghakhani¹, Alireza Nikoonejad², Pedram Abolfathpour^{3*}

¹Food and Beverages Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

²Department of Infectious Disease, School of Medicine, Bozali Sina Teaching Hospital, Qazvin University of Medical Sciences, Qazvin, Iran

³School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran



DEAR EDITOR,

Individuals with end-stage renal disease can opt for kidney transplantation or dialysis as a form of renal replacement therapy. However, kidney transplantation is generally preferred due to its potential to improve quality of life and survival rates. Cognitive impairment has been remained a common issue among kidney transplantation recipients which can significantly impact their quality of life in areas such as verbal learning, memory, executive functioning, making it challenging for them to manage their health and well-being effectively [1, 2].

Although kidney transplantation can reverse cognitive impairment and brain alterations resulting from end stage kidney diseases, some of these changes may be irreversible even after transplantation. Furthermore, this kind of treatment can affect employment rates, treatment adherence, hospital admissions, healthcare costs, morbidity, and mortality in the patients. Several risk factors contribute to cognitive impairment, including comorbid illnesses, depression, and lower levels of physical activity [3].

Performing neuropsychological assessments in kidney transplantation patients can help identify any cognitive decline or impairment early, allowing for appropriate intervention.

*Correspondence: Pedram Abolfathpour, MSc
School of Nursing and Midwifery, Urmia University of
Medical Sciences, Urmia, Iran

ORCID: 0000-0002-3302-2818

Tel: +98-44-32754016

E-mail: abolfathpourpedram@yahoo.com

Moreover, greater attention should be given to restrictions in social participation and quality of life, preferably before transplantation but during rehabilitation [4].

Therefore, efforts should be made to optimize pre-transplantation cognitive function and manage any comorbidities. Additionally, it is necessary to better understand the impact of modifiable risk factors on long-term cognitive function in kidney transplantation patients. These factors include weight gain, metabolic syndrome, new onset diabetes, hypertension, low physical activity, and immunosuppression [5].

In conclusion, cognitive impairment and changes in brain metabolism are linked to kidney transplantation over the long term, even in younger recipients. Therefore, strategies such as patient education, modification of risk factors of long-term cognitive function and monitoring of medical adherence must be developed to assist kidney transplantation recipients in coping with cognitive deficits.

REFERENCES

1. Aghakhani N, Sharif Nia H, Samad Zadeh S, et al. Quality of life during hemodialysis and study dialysis treatment in patients referred to teaching hospitals in Urmia-Iran in 2007. *Caspian J Intern Med* 2011;2:183-8.
2. Slessarev M, Mahmoud O, Albakr R, et al. Hemodialysis Patients Have Impaired Cerebrovascular Reactivity to CO₂ Compared to Chronic Kidney Disease Patients and Healthy Controls: A Pilot Study. *Kidney Int Rep* 2021;6:1868-77.
3. Binari LA, Kiehl AL, Jackson JC, Van J, et al. Neurocognitive Function Changes Following Kidney

Transplant: A Prospective Study. *Kidney Med* 2022;**4**:100560.

4. Jurgensen A, Qannus AA, Gupta A. Cognitive Function in Kidney Transplantation. *Curr Transplant Rep* 2020;**7**:145-53.
5. Golenia A, Olejnik P, Żółek N, *et al.* Cognitive Impairment and Anxiety Are Prevalent in Kidney Transplant Recipients. *Kidney Blood Press Res* 2023;**48**:587-95.