

Short Communication

End-Stage Renal Disease: A Milieu for Neurological Derangements in Addition to Metabolic Disturbances

Anoshia Afzal¹, Umar Farooque^{2*}, Abubakar Tauseef³, Naglaa Ghobriel⁴

¹Department of Pathology, University of Oklahoma Health Sciences Center, Oklahoma City, United States

²Department of Neurology, Dow University of Health Sciences, Karachi, Pakistan

³Department of Internal Medicine, Creighton University, Omaha, United States

⁴Department of Internal Medicine, Medical School of Alexandria, Alexandria, Egypt

* **Corresponding Author:** Dr. Umar Farooque, Department of Neurology, Dow University of Health Sciences, Karachi, Pakistan, E-mail: umarfarooque65@gmail.com

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This article highlight a very important aspect of neurologic consequences associated with End-stage renal disease (ESRD) and would like to add our reviews regarding ESRD and how its early and proper management can affect the overall mortality and morbidity associated with ESRD as well as how early management will lead to improved cognitive status in these patients. The very finding of decreased cortical thickness, as well as declining cognitive function in patients with ESRD, should prompt us to think

about managing kidney problems as soon as they start since they can lead to impaired cognitive status and debilitating mental conditions overtime which ultimately leads to death [1, 2]. It is therefore very important for us to start evaluating and detecting brain abnormalities in patients with chronic kidney disease (CKD) who have no apparent neurological symptoms which will help us improve the prognosis of patients with ESRD and may lead to a significant reduction in death rates associated with it. [1, 2].

Uremia causes the accumulation of certain toxic substances like urea, creatinine, guanidine, guanidinosuccinic acid, and methylguanidine in the brain and cerebrospinal fluid (CSF)

and this accumulation of toxins everywhere is the core issue associated with CKD and ESRD [3]. These toxins are present in their highest concentrations in the thalamus, mamillary bodies, and cerebral cortex among the different areas of the brain, and these areas are highly associated with cognitive function and any impairment involving them profoundly affects the neurological status of the patient [3].

What is crucial for us is to start taking into consideration the neurological consequences as soon as the patient is diagnosed with CKD or ESRD even if he/she does not have any complaints about the nervous system. More researches are required to evaluate patients with CKD/ESRD who are undergoing regular dialysis to assess if commencing early dialysis in the course of CKD is associated with any reductions in neurological derangements and improvement of overall survival and prognosis. We would also like to add the importance of ameliorating anemia associated with renal failure and improving the metabolic derangements which can help to prevent the accumulation of toxic substances inside the central nervous system and thus enhancing brain function as well as decrease the risk of developing depression and improving quality of life [4-6]. It is thus emphasized that managing CKD/ESRD by reducing the levels of metabolic toxins as well as optimizing the levels of hemoglobin, calcium, magnesium and other electrolytes can significantly alter the course of the disease and overall prognosis.

Disclosure

The authors report no conflicts of interest in this work.

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