

Uremic Encephalopathy in End Stage Renal Disease: A Case Report

Becky Maria Biju¹, Anitha Mathew¹, Biji Joseph²

¹PHARM.D (Doctor of Pharmacy) Interns, ²PHARM.D PB Intern

^{1,2}Pushpagiri Medical College Hospital, Thiruvalla, Kerala, India

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toxic, systemic blood ammonia levels are normal or only minimally elevated in uremia. Some of the symptoms of uremia especially nausea, vomiting, malaise and possibly bleeding are partly due to its intoxication with urea or a product of urea metabolism which could be ammonia. The patients with uremic encephalopathy display variable disorders of consciousness, psychomotor behavior, thinking, memory, speech, perception, and emotions. The common symptoms include sluggishness, fatigue, day time drowsiness, insomnia, slurring of speech, anorexia, myoclonus, asterixis, aphasic episode, coma and convulsion. The pathophysiology behind the condition is due to the accumulation of uremic toxins in the brain. The severe neurologic symptoms of uremic encephalopathy such as seizure, confusion, myoclonus, slurring of speech and asterixis are usually improved after a few runs of dialysis.

METHODS:

A retrospective medical analysis of 69-year-old male patient with CKD associated uremic encephalopathy, admitted to the Department of Nephrology, Pushpagiri Medical College hospital.

ABSTRACT

UREMIC ENCEPHALOPATHY is an acute or sub-acute organic brain syndrome that occurs in patients with advanced renal failure and is frequently associated with GFR less than 10ml/min/1.73m². Under conditions of renal failure where the blood level of urea is high. The common symptoms include sluggishness, fatigue, day time drowsiness, insomnia, slurring of speech, anorexia, myoclonus, asterixis, aphasic episode, coma and convulsion. In this case a 69-year-old male patient with history of ESRD, was presented with certain neurological symptoms associated with uremic encephalopathy. This case report adds to the prevalence of uremic encephalopathy associated with end stage renal disease and the importance of hemodialysis to resolve the clinical manifestations.

KEYWORDS: End Stage Renal Disease (ESRD), Glomerular Filtration Rate(GFR), Encephalopathy, Chronic Kidney Disease(CKD)

INTRODUCTION

UREMIC ENCEPHALOPATHY is an acute or sub-acute organic brain syndrome that occurs in patients with advanced renal failure and is frequently associated with GFR less than 10ml/min/1.73m². Under conditions of renal failure where the blood level of urea is high, the amount of urea entering the renal vein and subsequently into the gut is high. This is acted upon by urease produced by colonic bacteria converting it to ammonia. Urea acts as a uremic toxin only at extreme levels. At such levels it inhibits argininosuccinate lyase and could exert feedback inhibition of urea production possibly by channeling waste nitrogen into more toxic compounds like ammonia, carbamate or cyanate. Though ammonia is

CASE REPORT:

A 69-year-old male patient with significant past medical history was admitted to the nephrology ward with urinary incontinence (from the day before admission), slurring of speech, asterixis (for 3 days) and weakness of upper right limb and lower limb with marked difficulty in walking since one week. He felt like falling down while walking. He had no loss of consciousness, seizures, chest pain, fever and breathlessness during those days. He had past medical history of an acute ischemic stroke with right side hemiparesis. He had known compliance of CKD on hemodialysis since 1 month. Now 5 sessions of hemodialysis had been carried out. Also, he had diagnosed with type 2 diabetes, hypertension and vascular Parkinsonism for last 15 years.

On examination, the patient's blood pressure was 160/70mmHg, pulse rate and respiratory rate was 82 /min and 22/min respectively. Gastrointestinal and cardiovascular system examination reveals normal functioning. The patient's blood test results are given in the table given below:

Parametees	Day1	Day2	Day3	Day4	Day5
HB	6.2	8.2	8	7.8	9.8
TC	14300				
FBS	91	82	96	86	72
Na+	135	136	134	136	137
K+	2.9	3.3	3.9	4.6	4.4
Ca+	8.6				
Urea	169	151	142	133	119
Cr.	5.3	5.4	5.5	5.3	5.2
Urine out put	500/500	1000/1300	1000/1500	1350/1750	750/1200

Since the patient was presented with severe anemia, packed red blood cells were infused on second day. In order to correct the hypokalemic state, potassium supplements were given. The physiotherapy was initiated by the second day itself in order to improve the mobility. Hemodialysis was performed on alternate days along with regular medications for BP, vascular Parkinsonism, and diabetes. After 3 sessions of hemodialysis the symptoms were found to be improved. The patient was admitted for 5 days and at the time of discharge the patient was symptomatically stable and advised to review in OP for the follow up with RFT reports.

DISCUSSION:

Uremic encephalopathy usually presents with alterations in mental status fluctuating from mild sensorial clouding to delirium and coma. Besides the general symptom complex of encephalopathy, headache, focal motor signs and the "Uremic twitch convulsive" syndrome can be observed. Focal neurological signs such as hemiparesis, dysarthria, visual abnormalities or reflex asymmetry tend to be transient and alternate from side to side. The patient in our study exhibits slurring of speech, upper and lower limb weakness and urinary incontinence. Besides the symptomatic evaluation, blood urea levels also helped to confirm the diagnosis.

CONCLUSION:

Uremic Encephalopathy is a common clinical condition associated with end stage kidney disease. Urea levels are often high in those patients and these uremic toxins gets accumulated in the brain thereby encephalopathy occur.

This case makes it evident that neurological symptoms do accompany uremic encephalopathy. Hemodialysis is the currently available better option to correct the symptoms.

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