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Brain MRI-proven Posterior Reversible Encephalopathy Syndrome in Diaysis Patients with Initial Diagnosis of Hypertensive Encephalopathy

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Background: Sudden attack of seizure is very striking presentation in dialysis patients. The posterior reversible encephalopathy syndrome (PRES) is a recently proposed to be a clinically and radiologically defined syndrome characterized by seizures, headaches, visual disturbances. On magnetic resonance imaging (MRI) studies, vasogenic edema has been reported in a relatively symmetrical pattern, typically in the posterior area of the brain.

Methods: We investigated hypertensive encephalopathy patients on dialysis who developed PRES between 2005 and 2015 in our institution. Clinical features was analyzed in dialysis patients cohort on hemodialysis (HD) and peritoneal diaysis (PD) and were retrospectively reviewed by the electronic medical records of patients diagnosed with hypertensive encephalopathy and PRES. The collected cases were radiologically reviewed for reconfirm by the radiologists.

Results: Total 9 patients on dialysis were collected, the patients on HD are six and the other three patients are treated on PD. Seven out of nine patients who had seizure-like events in the emergency center. Six patients complained of severe headache with nausea, one female patient suffered from a visual blindness for one week. Their serum electrolyte, osmolarity and glucose levels were within normal range. All the patients had severe elevated blood pressure (BP) over 200/120 mmHg. After intensive care BP were well controlled slowly under 160/100 mmHg with the IV anti-hypertensives and seizure subsided with the anti-convulsant for a few days. Follow-up MRI within one month did not reveal any other defects. But one HD patient died of multi-organ failure in the ICU despite of supportive care.

Conclusion: High BP seems to be initial trigger factor. Lowering of BP and treatment of seizures was effective management in most cases. The MRI study has to be used early for appropriate intervention PRES because PRES is reversible without neurological sequele when treatment is instituted. The relationship between hypertensive encephalopathy and PRES needs to be confirmed by more serial studies.

Keywords: Posterior reversible encephalopathy syndrome, Dialysis, Hypertensive encephalopathy, MRI