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The clinical and radiological spectrum of posterior reversible encephalopathy syndrome: a retrospective study.

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Objective: The aim of this study was to describe the clinical and radiological findings of posterior reversible encephalopathy syndrome (PRES).

Materials and Methods: We retrospectively identified patients diagnosed as having PRES and admitted to "A. Gemelli" hospital from April 2008 to February 2016. We performed a detailed review of clinical information, including demographics, presenting symptoms, medical history and risk factors.

Results: We identified 14 cases of PRES (mean age 45,3 years). Mean peak systolic blood pressure was 180 mmHg (minimum-maximum, 80-240 mmHg). The clinical presentations included seizures(50%), encephalopathy (35%), headache (21%), visual disturbance (28%), focal neurologic deficit (14%). Etiologies of PRES included hypertension (21%), eclampsia-preeclampsia (35%), cytotoxic medications (35%), autoimmune diseases (7%). The most common regions of the brain involved were the parieto-occipital regions, followed by the frontal lobe, temporal lobe, thalamus. Follow-up imaging was performed in 9 patients after at least a period of 2 days: a complete or near complete resolution of edema was observed in all patients. Hemorrage occurred in 3 patients; foci or areas of cytotoxic edema was observed in 2 patients, pathologic contrast enhancement only in 1. 13 patients had a good clinical outcome; only one died during hospitalization.

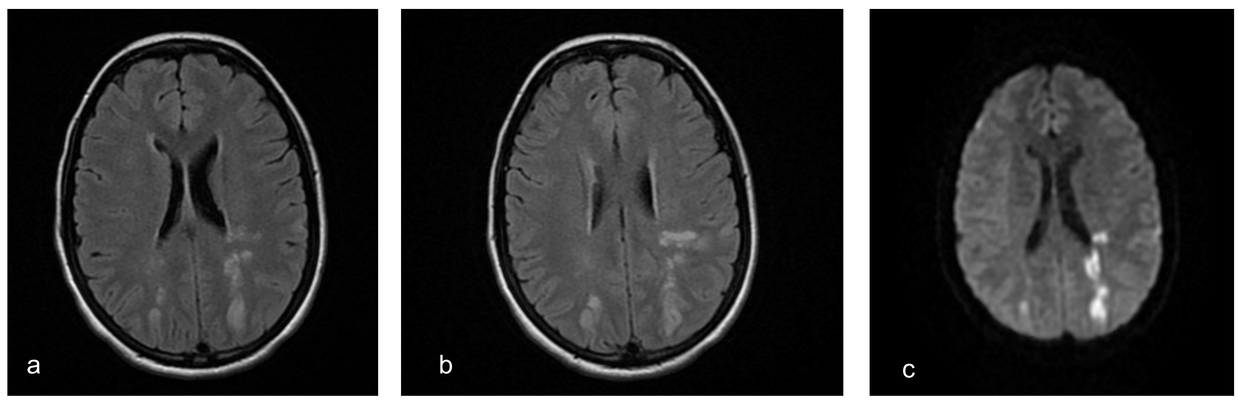

Fig. a,b,c: Axial T2 FLAIR (a,b) and DWI (c) sequences show predominant parieto-occipital pattern

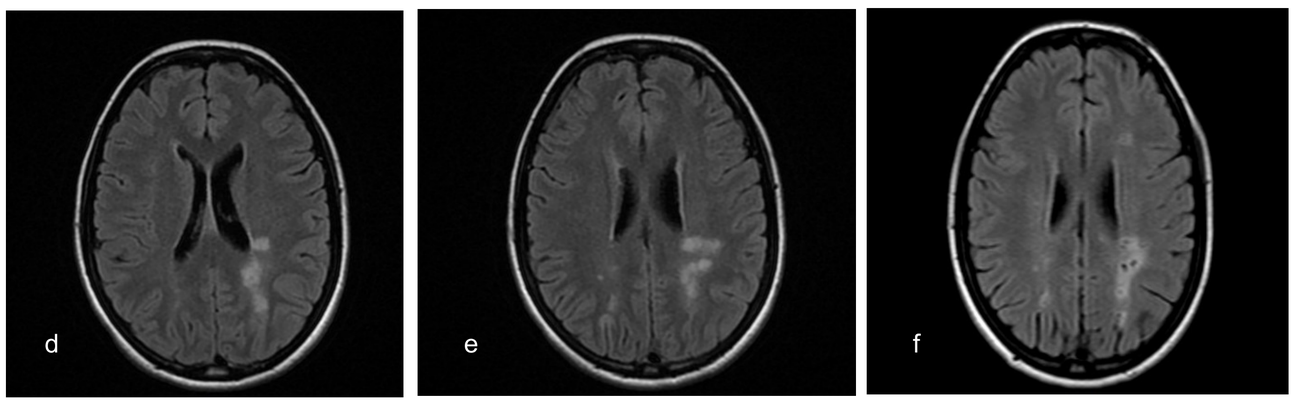

Fig. d,e,f: follow-up MRI after 20 days (d,e) and 1 year (f) with focal gliosis

Discussion: PRES is a clinicoradiological entity defined by a potentially reversible and predominantly vasogenic edema of the white matter with a predilection of parieto-occipital regions. However, atypical imaging findings have been increasingly recognized, such as lesion distribution patterns, cytotoxic edema, hemorrhage and contrast enhancement. PRES can occur in a variety of disorders and predisposing factors, such as severe hypertension, pre-eclampsia or eclampsia, use of immunosuppressive drugs, solid organ or bone marrow transplantation and history of renal and autoimmune diseases. The underlying pathophysiology is still a matter of debate, but it's clear that endothelial disfunction is a key factor. At clinical onset, the most common manifestations are seizures, headache, visual disturbances and encephalopathy. Given its clinical presentation, often nonspecific and variable, diagnosis is based on magnetic resonance imaging.

Conclusion: MRI is the diagnostic gold standard and it may be useful in the differential diagnosis. PRES is generally reversible and associated with good clinical outcomes; however, severe complications, sometimes life-threatening, can also occur. MRI allows to recognize promptly PRES and establish timely an adequate therapy.

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