Favorable Outcome with Early and Repeated Continuous Renal Replacement Therapy in Acute Necrotizing Encephalopathy

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To the Editor: A 5-y-old girl was admitted with vomiting and seizure for half a day. She presented with stiffness of limbs and loss of consciousness. She had no history of fever, rash, or cough. Physical examination was notable for spasticity and positive Babinski sign. Eight hours after admission, she developed fever, recurrent seizure, and shock, and lapsed into a coma. She was intubated and cerebral MRI was performed which showed bilateral, diffusion-restricted lesions of periventricular area, centrum semiovale and corona radiata. Cerebrospinal fluid result was not notable. She was diagnosed as acute necrotizing encephalopathy (ANE) and treated with methylprednisolone, mannitol, and antibiotics. Continuous renal replacement therapy (CRRT) was administered promptly and lasted for 7 d until she recovered consciousness and was extubated. A repeated MRI showed obviously alleviated neuroimaging. She was discharged and a one-year follow-up showed no cognitive impairment or seizure.

ANE is a rare acute encephalopathy mainly affecting children, which is diagnosed based on typical neuroimaging and symptoms [1]. It is often accompanied with poor outcomes [2]. ANE is regarded as brain-directed immune disease caused by excessive inflammation response [1]. CRRT is thought to reduce the inflammatory cytokines, thereby ameliorating toxic effect on brain, and was showed to be beneficial in acute exacerbations of inflammatory central nervous system diseases [3, 4].

This case showed severe illness, acute neuroimaging abnormality, but a fast neuroimaging improvement and a good long-term outcome. A prompt diagnosis was made and immediate CRRT therapy was preformed and lasted until symptoms disappeared. These above contributed to the good outcome of this child. CRRT, as an effective anticytokine measure, was rarely reported in treating ANE [1–3]. We described the present case to emphasize the importance of immediate neuroimaging analysis in children suspected with ANE. Prompt and ongoing CRRT may contribute to better outcomes in ANE.

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Data Availability Data can be obtained from the corresponding author.

Declarations

Ethical Approval The study was approved by the Ethics Committee of Shunde Women and Children's Hospital, Guangdong Province, China.

Conflict of Interest None.

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