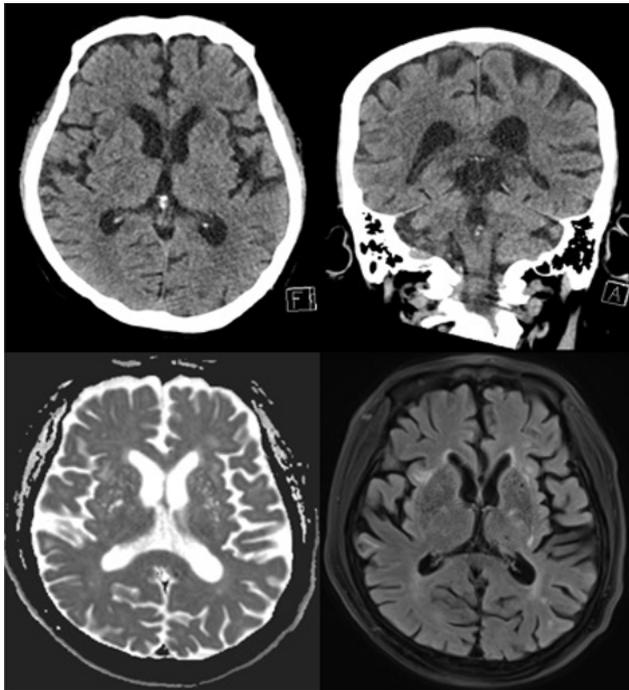


## Cefepime-induced neurotoxicity

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A 73-year-old male patient who had undergone radical cystectomy for bladder cancer was undergoing adjuvant cisplatin-based chemoradiotherapy, presented to the emergency room with sudden dyspnea, fever, generalized weakness. Upon admission, vital signs were as follows: blood pressure 118/82 mmHg, heart rate 166/min, respiratory rate 20/min, body temperature 39.6°C, and oxygen saturation 78% on room air, which improved to 98% with the application of nasal prongs delivering 4L/min of oxygen. Chest CT revealed a sign of pneumonia in the right upper lobe and Piperacillin/tazobactam was added. Blood and urine cultures revealed growth of Gram-positive cocci, including *Staphylococcus aureus* and *Enterococcus* spp., suggesting sepsis due to urinary tract infection. Teicoplanin was added, and a D-J catheter change was performed. The patient had persistent acute renal failure and urine output below 500cc per day, necessitating continuous renal replacement therapy. Despite the use of Piperacillin/tazobactam, the pneumonia worsened, leading to a switch to Cefepime after 11 days of treatment. The sleeping tendency and abnormal behavior, such as repeatedly mouthing food without attempting to swallow, have worsened. After 20 days of Cefepime usage, brain CT and MRI diffusion (non-enhance) were performed; however, no specific abnormalities were observed except for several small old infarctions, as well as mild chronic small vessel ischemia at both periventricular deep white matter. (See Figure 1.) Considering the possibility of neurotoxicity due to medication, Cefepime was discontinued, and the patient was maintained on thrice-weekly dialysis with observation of improvement in consciousness and neurological symptoms. The pneumonia and urinary tract infection also improved, leading to the patient's discharge. Cefepime is thought to cross the blood-brain barrier and accumulate in the cerebrospinal fluid and brain tissue, which can result in a range of neurological symptoms, such as confusion, myoclonus, seizures, and encephalopathy. Cefepime-induced neurotoxicity is a rare but early recognition and prompt management are important for improving patient outcomes.



**Figure 1.** non enhance brain CT and MRI diffusion; no specific abnormalities were observed except for several small old infarctions, as well as mild chronic small vessel ischemia at both periventricular deep white matter.