Cytomegalovirus encephalitis in a hemodialysis patient: a rare association

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INTRODUCTION

Cytomegalovirus (CMV) encephalitis is a rare condition in the general population, reaching a certain prevalence in populations with impaired immunity such as HIV patients, transplant recipients or those immunosuppressed by other causes (Arribas et al., 1996). To date no cases of CMV encephalitis have been reported in patients with chronic kidney disease (CKD) on hemodialysis. Some circumstances aggravate the susceptibility of CKD patients to opportunistic microorganisms such as the decrease in the number and response of T lymphocytes or altered antigen presentation (Kelly, 1994; Eleftheriadis et al., 2007; Lisowska et al., 2012). Here we describe the first case of CMV encephalitis in a patient with advanced CKD on hemodialysis.

CASE REPORT

A 77-year-old man with advanced CKD on hemodialysis, hypertension, type II diabetes, hypercholesterolemia, two vessel coronary disease, mitral and aortic insufficiency, obstructive sleep apnea treated with CPAP, Parkinson disease, and right renal cancer (T1N0M0) treated by nephrectomy was admitted to the emergency department for a decreased level of consciousness and fever. Although the initial clinical suspicion oriented to a urinary infection, the lack of improvement forced us to perform a lumbar puncture. Five days after cerebrospinal fluid was cultured, cytomegalovirus was isolated and ganciclovir initiated.

Discussion

Here we describe the first case of CMV encephalitis in a dialysis patient. CKD patients have a 6-fold risk of central nervous system infections compared to the general population. The most common infection is meningitis due to Staphylococcus and Mycobacterium tuberculosis followed by brain abscess. Regarding viral encephalitis, patients with advance CKD have 8 to 15-fold higher risk for developing these infections, the etiology most frequently being herpes and varicella-zoster viruses (Gunst et al., 2013). Infections in hemodialysis patients impact mortality and
morbidity and their detection is not always easy due to the chronic and asymptomatic increase in acute phase reactants and the nonspecific symptoms (Maschke et al., 2002; Quiroga et al., 2014). The causes that explain the enhanced rate of infections in this population include innate and acquired immune-deficiencies, uremia, comorbidities such as diabetes mellitus or chronic inflammation state. Other risk factors include vascular access (specifically catheters) or advance age. Unfortunately, the presentation of infections in hemodialysis patients is not always standard and some patients remain underdiagnosed or receive intensive antibiotic therapy to cover the majority of microorganisms.

In conclusion, CKD causes a significant degree of immunosuppression, as evidenced by the appearance of opportunistic infections such as CMV encephalitis.

References


