Acute pyelonephritis in a renal transplant patient secondary to infection by *Delftia acidovorans*: A case report

Pielonefritis aguda en paciente trasplantado renal secundaria a infección por *Delftia acidovorans*: a propósito de un caso

Dear Editor,

Pyelonephritis of the kidney graft is the infectious pathology that produces the most episodes of hospitalisation in kidney transplant patients, increasing their morbidity.

Delftia acidovorans (formerly known as *Comamonas acidovorans*) is a rare pathogen in humans. It is a gram-negative, aerobic, non-fermenting bacillus mainly found in the flora of water and soil and can form biofilms.

We describe the case of acute pyelonephritis caused by *D. acidovorans* in a 65-year-old male with a history of arterial hypertension, revascularized ischaemic heart disease, chronic kidney disease secondary to hypertensive nephropathy, and kidney transplant from a cadaver donor in asystole in September 2021. After performing the kidney transplant, the patient developed delayed kidney function, requiring several sessions of haemodialysis. Therefore, a graft biopsy was performed with an anatomopathological result suggestive of active rejection mediated by antibodies (not DSA), which was treated with boluses of corticosteroids and intravenous immunoglobulins. During his evolution, the patient presented multiple infectious complications, and the existence of obstructive uropathy secondary to ureteral stenosis was evident, leading to him having a double J catheter and urinary catheter.

The patient came for a check-up at the outpatient clinic at the Renal Transplant Unit reporting having suffered a fever spike at home 48 h before the assessment. At this time, the patient only had a urinary catheter since the double J catheter had been removed days before by the Urology department.

In the control analysis, deterioration of renal function was observed (Cr 4 mg/dl vs 2.6 mg/dl), leukocytosis (leukocytes 26.40 $10\hat{3}/\mu L$, N: 94%), and elevation of C-reactive protein (16.97 mg/dl). In the control urine culture, the growth of multidrug-resistant *D. acidovorans* (AmpC type beta-lactamase-producing strain) was evident. Treatment was initiated with IV meropenem and oral trimethoprim/sulfamethoxazole, with sensitivity to both according to the antibiogram.

The patient was admitted, and after 4 days of treatment, a new urine culture was collected, and *Candida parapsilosis* was evident, so anidulafungin was added to the previous treatment.

After starting the aforementioned treatment, the patient progressed satisfactorily, remaining asymptomatic, with progressive improvement in infectious parameters and renal function.

As discussed above, *D. acidovorans* is an unusual pathogen in humans. It is related to infections, especially in immunosuppressed patients, although cases of infection have also been described in patients with a competent immune system.[1]

The literature recounts cases of endocarditis,[2,3] pulmonary infections (such as pneumonia and empyema),[4,5] eye infections (such as keratitis and endophthalmitis),[6–8] peritonitis in patients on peritoneal dialysis,[9] urinary infection,[10,11] and bacteraemia related to IV catheters.[12,13]

D. acidovorans is an aerobic, non-lactose-fermenting gram-negative bacillus with an intrinsic AmpC and high resistance to aminoglycosides.[14] In our case, the microorganism showed a derepression of its constitutive AmpC, resembling a resistance pattern similar to other cases published in the literature.[15,16] The antibiogram showed sensitivity to treatment with piperacillin/tazobactam, ceftazidime, meropenem, trimethoprim/sulfamethoxazole and levofloxacin, showing resistance to aminoglycosides and beta-lactams.

The case presented is of interest since, to our knowledge, there is no documented case in kidney transplant recipients. Likewise, information on the antimicrobial susceptibility of non-fermenting, gram-negative and rare bacteria is of great clinical importance as it can pose a challenge for the adequate antibiotic treatment in our patients.

Conflicts of interest

The authors declare no potential conflicts of interest related to the content of this article.

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Targeting colonic BK channels: A novel therapeutic strategy against hyperkalemia in chronic kidney disease

Canales BK colónicos: una nueva estrategia terapéutica contra la hiperpotasemia en la enfermedad renal crónica

Dear Editor,

Hyperkalemia is a common electrolyte disorder frequently observed in patients with chronic kidney disease (CKD).[1] Once potassium (K^+) ions are absorbed from the daily food intake, they are predominantly distributed in the intracellular space than in the extracellular space.[1] Under physiological conditions, approximately 90% of the dietary K^+ ions are excreted into the urine, while the remaining 10% are excreted into the feces. The prompt management of hyperkalemia is to temporarily shift the extracellular K^+ ions into the intracellular space by insulin.[1] However, to fundamentally treat hyper-

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