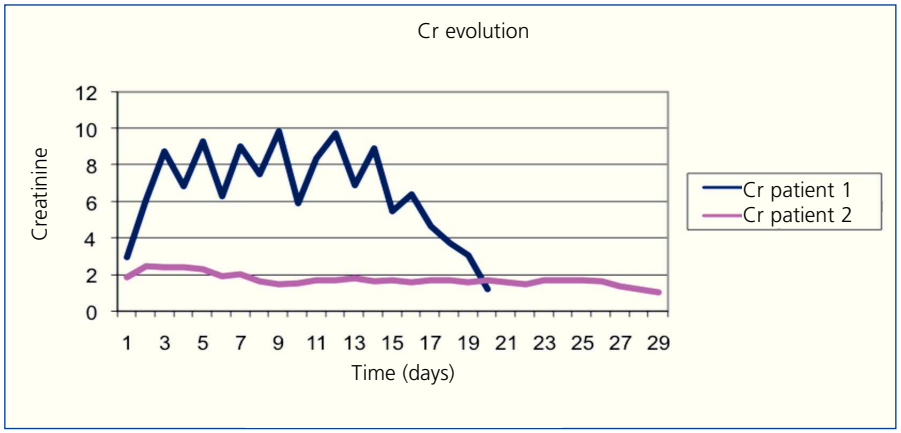

Figure 2. Comparing evolution of creatinine figures in two patients.

tetrameric form to a dimeric form. It filters through the glomerulus and goes inside the proximal tubule when it binds to the apical surface of megalin-cubulin receptor.[3] It is there that globin and haem group are dissociated. The intracellular increase of proteins in the haem group produces nephrotoxicity caused by renal hypoperfusion, direct cytotoxicity and formation of intratubular casts interacting with Tamm-horsfall protein, which obstruct the tubules.[4]

During massive haemolysis, deleterious effects of the nitric oxide depletion are observed: smooth muscle tone imbalance, vascular constriction, thrombosis and intrarenal vasoconstriction.[5]

Chronic damage is produced because the kidney is continually exposed to the haem group, mediated by monocyte chemoattractant protein-1 (MCP-1) and TGFb1, which recruit monocyte and macrophages and provoke fibrosis.[4]

These cases show the two forms kidney damage expression in haemolysis: acute and chronic. The first had acute haemolysis and required haemodialysis, with complete recovery of the renal function. The second had chronic haemolysis and chronic renal damage due to maintained exposure to the haem group, and needed conservative treatment, maintaining certain renal failure.

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Atypical localisation of tuberculosis in kidney transplants

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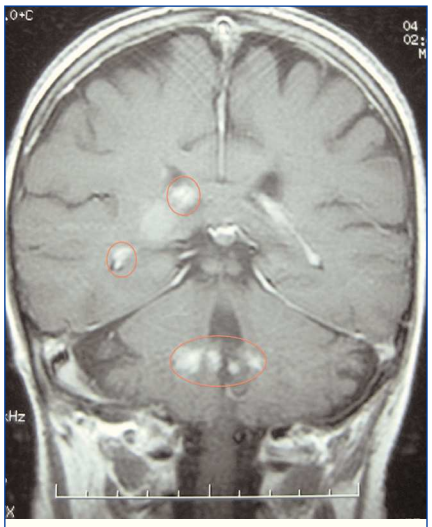
To the Editor,

Kidney transplant recipients have a greater risk of developing tuberculosis, commonly being atypical and extrapulmonary. We present the case of two patients submitted to kidney transplant with extrapulmonary tuberculosis in an uncommon localisation.

A 66-year-old female, with chronic kidney failure secondary to hepatorenal polycystosis, which received a deceased-donor kidney transplant and treatment with basiliximab, steroids, mycophenolate mofetil and tacrolimus. She suffered a type IIb cortical-resistant acute rejection and needed treatment with OKT3. After four months she was admitted for fever, general discomfort and intense asthenia. She was diagnosed with suspected pulmonary tuberculosis by chest computed tomography (CT) and fibrobronchoscopy, confirmed by Ziehl-Neelsen staining and Löwenstein culture. She was prescribed treatment with rifampicin, isoniazid and pyrazinamide for two months, followed by rifampicin and isoniazid for four months. After 15 days she was readmitted for confusion, occipital cephalgia and visual alterations. In a brain resonance, multiple hypertensive nodules were seen in T2, with nodular focal contrast in the right frontal, subcortical, suprasylvian, right occipital areas and in cerebellar peduncles, indicative of granulomatous infiltration secondary to tuberculosis (Figure 1). Treatment with isoniazid and rifampicin was extended to nine months and the patient recovered.

A 41-year-old male, diagnosed with hepatorenal polycystosis received a deceased-donor kidney transplant with immunosuppression with cyclosporin and steroids. He suffered a grade IIb acute interstitial rejection, treated with



Magnetic resonance imaging in which multiple images compatible with tuberculous granulomas can be observed in different localisations.

Figure 1. Cerebral tuberculoma

three boli of 500mg of 6-methylprednisolone. Three and 9 years after the transplant he presented with two episodes of dysphonia; on both occasions with whitish lesions on the arytenoid cartilages and the epiglottis. Anatomopathological diagnosis was tuberculoid granulomatous chronic laryngitis (Figure 2). The Ziehl-Neelsen staining and Löwenstein test were positive. The patient received treatment with isoniazid, rifampicin and pyrazinamide for 2 months and isoniazid and rifampicin for 9 months.

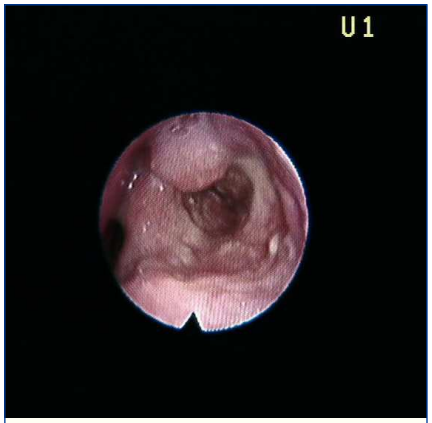


Image from the laryngoscopy in which multiple whitish lesions can be observed, localised on the arytenoid cartilages, epiglottis and vocal chords, compatible with tuberculous laryngitis.

Figure 2. Tuberculous laryngitis

Tuberculosis in organ recipients is considered to be an opportunist infection in most cases, given that it reactivates latent infection with an incidence of 20 to 70 times more than in the general population. In Europe it is from 0.07% to 1.7%, with a mortality rate of 20%-30%.[1]

Although immunosuppression for kidney transplantation is less intense than for other organs, it is associated with greater risk of tuberculosis, given that the T cells' function is particularly altered due to uraemia and because of a greater exposure to the infection in the dialysis units.[2]

The fact that the disease spreads in 30% of cases, and anti-rejection treatment helps the infection become localised in unsuspected sites, which could make diagnosis more difficult and postpone treatment.[3]

Diagnosing latent infection by the tuberculin test presents many false negatives. The measurement of the interferon gamma response to the T cells stimulated by the *M. tuberculosis* antigens (Quantiferon TB gold) may be more sensitive than the previous one.[4]

It is advisable to treat patients with latent tuberculosis before they undergo transplantation with isoniazid at a dosage of 300mg/day for 9 months. In the same way, for patients that have recently undergone transplant, prophylaxis with isoniazid is recommended for at least 6 months if it is suspected that they had a previous infection.[5]

Treating the active infection does not differ from the usual treatment, although we must consider that certain drugs must be adjusted in presence of kidney failure and that others alter the P450 cytochrome, which means that they could interact with immunosuppressive drugs that use this enzymatic system, mainly calcineurin inhibitors and antimammalian target of rapamycin (MTOR) agents.[5]

Our patients presented with a tuberculous infection in an uncommon localisation, favoured by the kidney transplantation immunosuppression and the anti-rejection treatment. Treatment was effective to control the disease.

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Clinical case: peritoneal dialysis patient with cloudy peritoneal fluid following administration of calcium antagonists

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To the Editor,

Cloudy peritoneal fluid (PF) from peritoneal dialysis (PD) may be due to increases in the cellular and non-cellular constituents of the peritoneal fluid. Polymorphonuclear leukocytes may increase by intraperitoneal or juxtaperitoneal inflammation or even in the context of the chemical peritonitis induced by drugs. The increase in eosinophils points at a response to peritoneal air or an allergic reaction to one of the dialysis system's components. The presence of red cells can be due to many causes. Monocytes or malignant cells are very rare. Non-cellular causes with negative cultures are limited to fibrin or high triglycerides: lymphatic obstruction, pancreatitis, catheter traumatism, calcium antagonists (CA), dihydropyridine or superior vena cava syndrome.

The presence of chyloperitoneum with lercanidipine, manidipine and some case of nifedipine has been described in the literature. In 1993, the presence of cloudy PF secondary to the administration of manidipine was described in 5 of the 8 patients undergoing PD within the first 24 hours after starting treatment (10-20mg/day). It was difficult to distinguish whether the cloudy PF was caused by the drugs or an infection, but it was noted that the patients did not present with any usual clinical signs (nausea, vomiting, fever or abdominal pain), leukocytes <10 cells/μl and negative culture for fungal infections, aerobic and anaerobic bacteria. Triglyceride figures were between 120mg/dl and 320mg/dl. In no case were the serum triglyceride levels modified before or after manidipine was taken, but the triglyceride figures did normalise in PF once the drug was withdrawn.

After that, a retrospective study with 251 patients in continuous ambulatory peritoneal dialysis (CAPD) treated with CA observed cloudy PF in 19 cases. Four patients that received CA had cloudy PF: with benidipine (two of two patients [100%]), with manidipine (15 of 36 [42%]), with nisoldipine (1 of 11 [9%]) and nifedipine (1 of 59 [0.6%]). None of the patients that took nicardipine (25), nilvadipine (7), nitrendipine (2), barnidipine (1) or diltiazem (8) presented with cloudy fluid.

An expert group from Taiwan described the presence of chyloperitoneum in 14 of 222 patients, associated with lercanidipine.

We present the case of a 44-year-old female with chronic kidney failure (CKF) secondary to type I membranoproliferative glomerulonephritis, on the CAPD programme since June 2010, without any previous bacterial peritonitis episodes. She was treated with furosemide 160mg/day, olmesartan 40mg/day, ramipril 10mg/day, nifedipine OROS 60mg/day, bisoprolol 10mg/day, doxazosin 16mg/day, calcium carbonate 3g/day, lanthanum carbonate 1500mg/day, rosuvastatin 5mg/day, acetylsalicylic acid (ASA) 100mg, Nepro® and aranesp 60μg/fortnightly.

She came for a consultation because she had cloudy PF but she did not present with fever or abdominal pain. Two days before, her treatment for high blood pressure had been modified, changing from nifedipine to manidipine, in an attempt to improve her chronic peripheral oedemas. Bacterial peritonitis was dismissed and she was given an appointment 48 hours later for a smear check. She had milk-like cloudy PF with the presence of 4 leukocytes/μl and triglycerides (119mg/dl). The cholesterol levels in the plasma and the triglycerides were normal (180mg/dl and 76mg/dl, respectively). Given that chyloperitoneum secondary to taking manidipine was suspected, this drug was suspended and a new test was taken 24 hours later. The PF was clear and free of triglycerides.

Given that the patient's high blood pressure continued to be severe, aliskiren at a dosage of 300mg/day and nifedipine OROS was reintroduced at a dose of 30mg/day.

Therefore, we can conclude that the milk-like PF in our patient was related to introducing manidipine, given that following its withdrawal the appearance and PF triglycerides levels normalised. However, she had been previously treated with nifedipine and did not present with these changes, which also coincides with the results obtained in previously cited studies.

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