FAVOURABLE OUTCOME OF KIDNEY TRANSPLANTED PATIENTS WITH FUNGAL CONTAMINATION OF PERFUSION FLUID. RESULTS FROM A SINGLE-CENTER CONSERVATIVE INTERVENTION PROTOCOL

Ranghino A[1], Diena D[1], De Rosa FG[2], Faletti R[3], Barbui AM[4], Guarnaccia C[3], Corcione S[2], Messina M[1], Biancone L[1].

[1] Renal Transplantation Unit "A. Vercellone", Division of Nephrology Dialysis and Transplantation, Department of Medical Sciences, Città della Salute e della Scienza Hospital, University of Turin, Italy
[2] Dept. of Medical Sciences, Infectious Diseases at Amedeo di Savoia Hospital, University of Turin, Turin, Italy
[3] Institute of Radiology, Dept. Surgical Science, University of Turin, Turin, Italy
[4] Microbiology Laboratory, Dept of Medical Laboratory, Ospedale Città della Salute e della Scienza, Turin, Italy

OBJECTIVES

Contamination of kidney allograft perfusion fluid (PF) could lead to serious bacterial and fungal infections. Specifically, fungal contamination of PF may induce life-threatening complications such as renal mycotic arteritis, aneurysms and arterial wall rupture. (1) At present, preemptive treatment of transplanted patients with PF contaminated by fungi varies from preventive nephrectomy to microbiological and morphological monitoring of the recipient together with antifungal therapy. (2,3)

METHODS

In this study we evaluated a conservative management strategy based on a promptly start of antifungal therapy, a strictly clinical and microbiological monitoring of the recipients. Concomitantly, a rigorous evaluation of the renal artery using Doppler ultrasound (US) together with magnetic resonance (MR) angiography without contrast media using free-breathing ECG-gating sequences were performed. (Fig 1,2) In addition, we conducted the analysis of the isolated *Candida* strain in order to identify the production of antimicrobial-resistant biofilm (data in progress) and we checked at defined time points the fungal antigen β-D-glucan, a marker of invasive fungal infection, in the serum. (4,5)

Table1

Donors	
Age, yrs	61±14.9
Cold ischemia time, hrs	15±4
Recipients	
Age, yrs	54±12.7
Sex, (M/F)	5/5
Induction ID, No. (%)	
Basiliximab	10 (100)
Maintenance ID, No. (%)	
Tacrolimus	10 (100)
Cyclosporine	0
Mycophenolate mofetil	8 (80)
Everolimus	0
Azathoprine	0
Steroids	10 (100)

Table1. Baseline characteristics of the 10 patients.
ID: immunosuppression therapy.

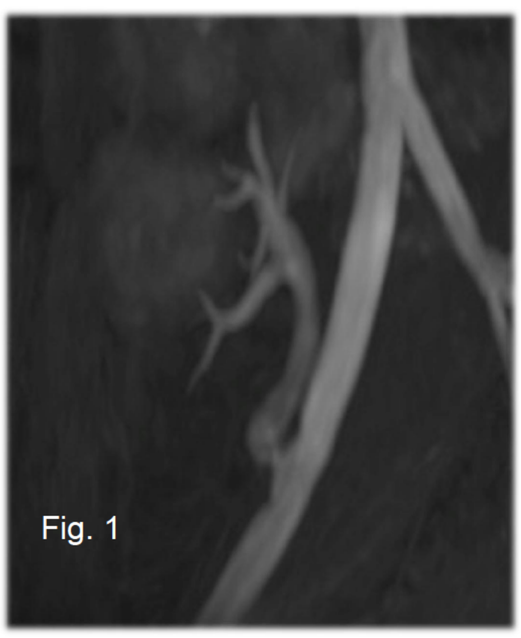

Figure 1 and 2. Rapresentative MR images of kidney graft arteries obtained without contrast media using free-breathing ECG-gating sequences .

RESULTS

From January to December 2013 the incidence of contaminated PF by *Candida* was 8 % (10/125) (*albicans* 7, *glabrata* 1, *parapsilosis* 2). Microbiological evaluation of urine, blood and drainage fluids were negative in 9/10 recipients, (Table 1).

Preemptive broad-spectrum antifungal therapy with caspofungin was started after a mean of 4.2±1.2 days post-surgery on the basis of the presence of fungi in the bacterioscopic evaluation. Subsequently, the antifungal treatment was modified according to the antibiotic sensitivities and it was maintained for a mean of 25.3±9.5 days. Radiological examination both with Doppler US and MR did not show any significant signs of renal artery disease in all cases (Figure 1, 2)

The antigen β-D-glucan checked at T7, T14, T21, T30, T60, T90 post-operative day did not reach significant positive values.

2/10 patients developed acute pyelonephritis confirmed by MR, 14 days after transplantation, and treated successfully with antibiotic therapy. The etiology of PNA were *E.Coli* isolated in urine and in blood culture in one patient and unknown in the second. At present, with a mean follow-up of 11.4±3.5 months, all patients are alive with a functioning graft.

CONCLUSIONS

Arteritis and arterial wall ruptures are life-threatening diseases that could be transmitted by kidney allograft perfusion fluid to the recipient. According with their experience some authors suggested different therapeutic approaches in presence of contaminated PF in order to reduce the morbidity and mortality risk in the transplanted patients. Nevertheless, the best strategy in presence of contaminated PF by fungi remains unclear. Based on our data a careful clinical, microbiological and morphological monitoring together with a preemptive and prolonged antifungal therapy could be a safe conservative strategy protocol to adopt in kidney transplanted patients with PF contaminated by fungi.

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51ERA-EDTA
695--MP
N) Renal Transplantation. N2) Clinical epidemiology of renal transplantation.
Andrea Ranghino
DOI: 10.3252/pso.eu.51era.2014
Poster presented at: 51 ERA-EDTA CONGRESS AMSTERDAM 2014