Pre-emptive second renal transplant from deceased donor: A new trend

Segundo trasplante renal preventivo de donante cadáver: explorando un nuevo camino

Dear Editor,

In the United States, 4% of kidney transplant (Tx) recipients restart dialysis annually, the fifth leading cause for starting dialysis.[1] Extrapolating these data to Spain, approximately 1300 patients would restart dialysis after losing their Tx each year.

These patients represent a high-risk group when they start dialysis, and, in those in whom immunosuppression is maintained, the risk of mortality is 3.4 times greater than in those in whom it is suspended.[2] A preventive transplant would solve these problems, since the patient would not return to dialysis and would maintain immunosuppression.

In addition, there is debate about whether it is ethical to transplant a patient who is not on dialysis when there are patients on replacement treatment. If the case is a living donor, it would not be competitive,[3–5] but there is the possibility of using a deceased donor if there is no candidate on dialysis for that graft.

We have assessed the results of a programme of preventive transplantation exclusively from deceased donors in a retrospective observational study of matched cohorts.

The 30 transplant recipients in a pre-dialysis situation who received a second Tx between 2008 and 2019 were selected and compared with a control group of 30 patients who received Tx while on dialysis. All donors were brain dead. Preventive Tx was considered with a glomerular filtration rate <15 ml/min, median 10.5 ml/mn, and an expected time for starting dialysis >6 months. Post-transplant follow-up was greater than 12 months.

Table 1 shows the variables of homogenisation between the groups and Table 2 those of efficacy.

There were no differences in the homogenisation variables except in the time on the waiting list, which was lower in the study group, and in the duration of the first graft, which was higher.

There were no differences in the efficacy variables, except in the mean survival time of the recipient, which was higher in the pre-dialysis group. Johnston et al.[3] also concluded that pre-emptive transplant recipients had better survival that could be explained by the reduction in dead patients with a functioning graft. Similarly, the study by Girerd et al. concludes that preventive deceased-donor retransplantation has better graft survival, similar to preventive or non-preventive live-donor graft survival.[4] This has motivated us towards preventive deceased-donor retransplantation in the event that the recipient does not have a living donor and there is no other candidate on dialysis.

The incidence of delayed graft function was lower in our series in the pre-dialysis group, which coincides with other series and is attributed to the residual renal function of this group.[3–5]

The duration of the first transplant was longer in our pre-dialysis group, which is similar to findings in other series,[3–5] and may indicate a greater immunological tolerance of this group, which is reflected in a lower percentage of pre-transplant preformed antibodies.[3–5] The longer duration of the first graft is also associated with better survival of the second.[3,4,6]

Several authors have demonstrated that patient sensitisation is higher in the dialysis group[3–5] due to the suspension of immunosuppression when they are included in dialysis.[7] This would make retransplantation difficult, and their time on the waiting list is longer as presented in published series,[4] as in ours. It would mean an advantage of preventive transplantation in which immunosuppression is maintained, avoiding sensitisation and a possible graft intolerance syndrome.

The longer the time spent on the waiting list, the worse is the patient and graft survival after retransplantation.[6,8] These data, together with the risk of mortality in patients on immunosuppressive treatment on dialysis,[2] the difficulty of managing them on dialysis, and the side effects of the treatment,[9] would force us to shorten this waiting time, an objective achieved by a preventive retransplantation.

It is noteworthy that preventive retransplantation avoids dialysis comorbidities, such as catheter placement, and a significant percentage of these patients present depression when restarting dialysis, and a high number of them reject a retransplant.[10]

The different series present more living donors in the pre-emptive group to avoid a reduction of possibilities of Tx in patients on dialysis.[3–5] In our case, all donors were all deceased, which gives great homogeneity to the series and a certain originality compared to published series.

Although the benefit of this type of transplant appears to be proven, we must consider the ethical problem of re-transplanting in a recipient, undoubtedly with special characteristics, but not yet on dialysis. For this reason, we insist on performing this type of transplant only if we do not have a candidate on dialysis.

This strategy seems promising since, in the published series, there has been an increase in this type of pre-emptive retransplantation over time.[3,4] Our data confirms this, since we have gone from 1% in the previous three years to 9.5% in 2017–2019 (23 out of 241 Tx; $P = .001$).

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Table 1 – Homogenisation variables of second transplant recipients according to their status on dialysis or pre-dialysis.

	Dialysis	Pre-dialysis	P
Age (donors)	51.5 (45.0–60.5)	57.0 (47.5–69.3)	.129
Gender (donors)	18/12 (60/40%)	22/8 (73.3/26.7%)	.795
Age (2 Tx)	54.5 (39.8–57.0)	58.5 (49.0–69.0)	**.011**
Gender (recipients), M/F	17/13 (56.7/43.3%)	16/14 (53.3/46.7%)	.273
Blood type			.194
A	13 (43.3%)	15 (50.0%)	
B	1 (3.3%)	1 (3.3%)	
AB	0 (0.0%)	3 (10.0%)	
O	16 (53.3%)	11 (36.7%)	
Duration of first transplant (months)	**84.0 (1.0–145.5)**	**118.5 (80.3–173.5)**	**.047**
Waiting list time (months)	**5.0 (2.8–11.5)**	**2.0 (0.88–4.0)**	**.002**
Cold ischaemia time (h)	17.0 (15.0–21.0)	16.5 (13.8–18.3)	.309
Follow-up time	32.0 (14.8–45.8)	29.5 (15.0–47.8)	.767
HLA antibodies			
Class I-positive	16 (53.3%)	11 (36.7%)	.194
Class II-positive	13 (43.3%)	13 (43.3%)	1.000
Class I-positive or II-positive	18 (60.0%)	14 (46.7%)	.301
HLA incompatibilities			.774
0–3	9 (30.0%)	8 (26.7%)	
4–6	21 (70.0%)	22 (73.3%)	
Rituximab	10 (33.3%)	5 (16.7%)	.136
Thymoglobuline	29 (96.7%)	26 (86.7%)	.353
Tacrolimus	28 (93.3%)	30 (100.0%)	.492
m-TOR	18 (60.0%)	20 (66.7%)	.592
Mycophenolate	12 (40.0%)	11 (36.7%)	.791

In bold, significance $P < .05$.

Table 2 – Efficacy variables.

	Dialysis	Pre-HD	P
Early kidney failure	2 (6.7%)	0 (0.0%)	.492
Delayed graft function	5 (16.7%)	1 (3.3%)	.195
Acute rejection	2 (6.7%)	3 (10.0%)	1.000
Final creatinine (mg/dl)	1.50 (1.20–2.20)	1.45 (1.10–2.15)	.589
Final CKD-EPI (ml/min)	45.0 (29.0–53.0)	46.9 (28.0–59.4)	.762
Albumin/creatinine ratio (mg/g)	45 (13–102)	89 (28–211)	.164
Patient survival time, mean (95% CI), months	97 (69–124)	131 (94–168)	.707
Graft survival time, mean (95% CI), months	**74 (47–102)**	**131 (94–168)**	**.049**

In bold, significance $P < .05$.

In conclusion, retransplantation in patients with terminal chronic dysfunction has better graft survival, avoids the recipient's return to dialysis, shortens the time on the waiting list, decreases sensitisation and eliminates the dilemma of suspending immunosuppression.

Authors

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Pauci-immune necrotizing glomerulonephritis in a patient with ankylosing spondylitis

Glomerulonefritis necrotizante pauciinmune en un paciente con espondilitis anquilosante

Dear Editor:

Ankylosing spondylitis (AS) is an autoimmune disease that emerged from the interaction of genetic tendency and environmental risk factors.[1] Patients with AS are mostly diagnosed at the end of their third decade of life after approximately 10 years of insidious course.[1] Membranous glomerulopathy secondary to etanercept therapy, immunoglobulin A (Ig A) nephropathy, and renal amyloidosis were reported as kidney diseases associated with AS.[2–4] Anti-neutrophil cytoplasmic antibody (ANCA)-negative pauci-immune necrotizing glomerulonephritis (PING) is also one of the auto-immune diseases.[5] The association of PING with AS has not been reported. Herein, we report for the first time the development of ANCA-negative PING accompanied by pulmonary hemorrhage in a patient with AS.

A 39-year-old male patient was diagnosed as having AS on the basis of bilateral grade 2 sacroileitis (Fig. 1) and inflammatory low back pain that had woken him up at nights for 1 year.[6] He had been treated with sulfasalazine 1 g twice daily and acemetacin 120 mg/d for 1 year, and methotrexate 15 mg once weekly, methylprednisolone 32 mg/d and colchicine 0.5 mg/d for 2 months in another hospital. Some of the patient's symptoms including swelling and pain of the fingers (dactylitis), and buttocks pain, did not resolve with this management. After the first year of follow-up, a skin lesion biopsy was performed for the leukocytoclastic vasculitis that appeared on his left lower leg. By that time his serum creatinine levels had increased to 4.0 mg/dL from the basal levels of 0.77 mg/dL in a period of 1 month. He was hospitalized at our department because of the rapid increase in his serum creatinine level and nephrotic range proteinuria (3.9 g/d) with urinary dysmorphic erythrocytes. His serum complement 3 (C3) and 4 (C4) levels were normal (0.94 g/L; normal range, 0.9–1.8; and 0.2 g/L; normal range, 0.1–0.4, respectively), and no antinuclear antibody, anti-double-stranded deoxyribonucleic acid antibody,

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