DE NOVO DONOR-SPECIFIC ANTIBODIES AFTER ALLOGRAFT NEPHRECTOMY

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INTRODUCTION

Allograft nephrectomy (NX) is a well recognised cause of HLA sensitisation after graft failure [1] and it has shown to be an independent predictor for the development of DSA after ceasing immunosuppressive therapy in patients with failed grafts [2]. The presence of pre-formed DSAs is associated with poor allograft outcomes [3] and this should be taken into account for patients awaiting re-transplantation. As yet, there are few studies describing the tempo, class and predictors of DSA development in previously unsensitised patients undergoing NX after the failure of their first graft.

METHODS

263/1,714 (15.3%) patients transplanted at our Centre between August 2004 and October 2015 lost their grafts and 106 underwent NX. Only patients returning to dialysis after the failure of their first graft and without detectable DSA at the time of NX or transplant failure were included. Patients were divided into two groups according to whether they underwent NX after transplant failure (NX+) or not (NX-). Sera were taken for class I HLA (A/B/Cw) and class II (DR/DP/DQ) at the time of NX (at the time of transplant failure for the NX- group) and after 3, 6, 12 and 24 months using the single antigen Luminex assay. A mean fluorescence intensity value of >1,000 was considered positive. Statistical analysis was performed using IBM SPSS Statistics ver. 20 and GraphPad Prism ver. 6.0

RESULTS

63 and 49 patients were assigned to group NX+ and NX- respectively (Table 1). Tacrolimus (Tac) was discontinued at the time of NX in 51/63 and by 3 months after NX in 12/63 patients, but continued in 47/49 NX- patients. As expected, we observed a higher rate of DSA positive patients in the NX+ group compared to the NX- group (p<0.001 for all the study time points, (Figure 1). DSA formation (class I, II and I+II) was significantly greater (p<0.001) in NX+ group and DSA formation was delayed in the NX- group.(Figure 2). Tac withdrawal in both groups was associated with an increased incidence of DSA production (p<0.001 at all time points, (Figure 3). After correction for previous pregnancies, blood transfusions, mismatch and transplant vintage, multivariate analysis revealed the NX as a risk factor for the production of DSAs after 6, 12 and 24 month and the pre-transplant dialysis duration and history of rejection as risk factors for the development of DSA after 24 months.

Table 1	NX + (N=63)	NX – (N=49)	p
Female (%)	53.7	46.3	0.697
Previous pregnancies (%)	20.6	18.4	0.814
Previous transfusions (%)	93.7	83.7	0.125
>5 transfusions (%)	50.0	20.4	0.003
Pre-emptive (%)	22.2	20.4	0.816
Pre-Tx RRT duration, months	18.1 (0.1-77.6)	22.8 (2.1-72.7)	0.635
Live-donor (%)	44.4	32.7	0.244
Alemtuzumab (%)	65.1	79.6	0.139
History of rejection (%)	31.7	24.5	0.527
History of AMR (%)	28.6	20.4	0.383
Tx vintage, days	209 (4-958)	1,805 (863-2,512)	<0.001
NHSBT MM: «000»	6.3	14.3	0.048
«Favourable»	71.4	49.0	
«Unfavourable»	22.2	36.7	
Total MM, median	3 (2-4)	4 (2-5)	0.265

CONCLUSIONS

In our selected cohort of unsensitised patients with a first failed kidney, graft NX was followed by significant and continuing DSA production compared with NX- patients. However NX- patients did develop DSA 6 to 12 months after graft failure, albeit less frequently. Our results suggest that NX and immunosuppression withdrawal for non essential reasons should be avoided particularly in patients suitable for retransplantation.

REFERENCES

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