AB0 INCOMPATIBLE LIVING DONOR KIDNEY TRANSPLANTATION PROGRAM IN PRAGUE

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Background:

ABO incompatible (ABOi) kidney transplantation is an important modality to facilitate living donor transplant for incompatible pairs. Here we report the first successful series of the program initiated in 2011.

Methods:

11 (7 males and 4 females) end stage renal disease patients had undergone living donor ABOi kidney transplantation, 8 patients were treated with dialysis and in 3 patients pre-emptive transplantation was performed. Protocol consisted from single rituximab (375 mg/m^2) shot 28 days before scheduled surgery, tacrolimus QD 0.2 mg/kg, MMF 2000mg/day and prednisone 30mg, all initiated 14 days before surgery. Glycorex selective immunoadsorption (Fig 1.) was initiated a week before surgery and respective number of therapies depended on pre and post transplant heamaglutinin titers. Surgery was performed only if titers <1:8. Only low risk (PRA<20%) first kidney transplant recipients were included.

Figure 1: Glycorex selective immunoadsorption

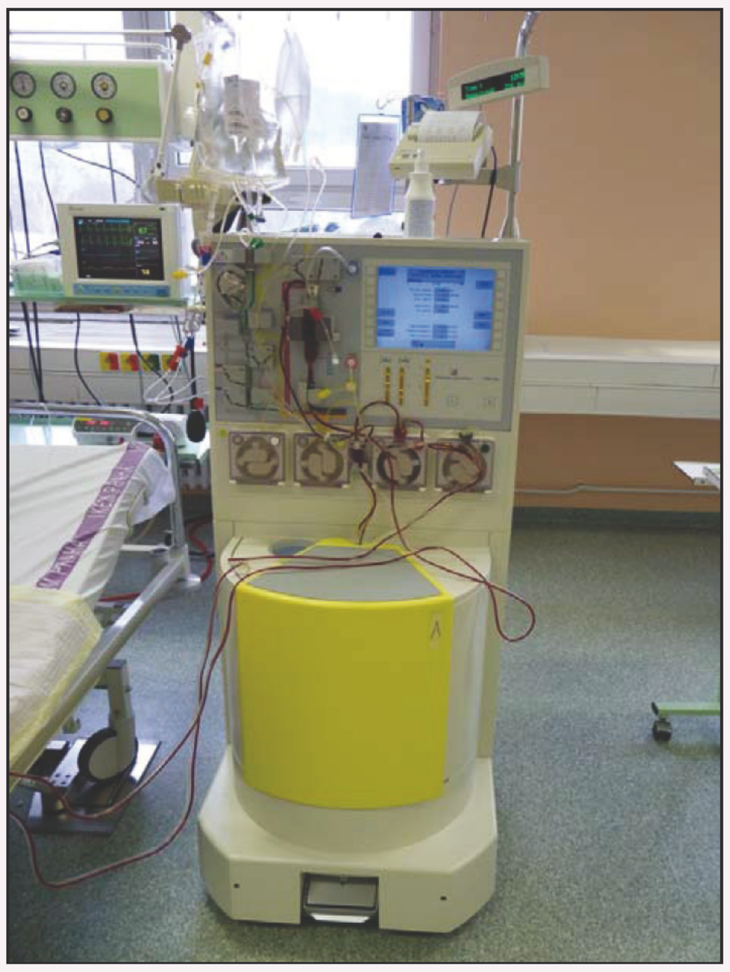

Table 1: Patients demographics:

Patient number	Sex	Relation	Recipient blood group	Donor blood group	Original disease	CKD	PRA %
1	M	Parent	A +	AB +	IgAN	HD	0
2	M	Partner	A -	B +	PKD	HD	17
3	F	Partner	0 +	B +	SLE IV/V	G5	7
4	F	Parent	B +	AB +	TIN	G5	0
5	M	Partner	A -	B +	PKD	HD	13
6	M	Friend	A +	B +	AKI	HD	0
7	F	Daughter	B+	AB+	Hypertension	G5	0
8	M	Partner	0+	A+	PKD	HD	0
9	M	Parent	0+	A+	FSGS	HD	2
10	F	Partner	0+	A	FSGS	HD	0
11	M	Partner	0+	AB	PKD	CAPD	11

Table 2: Haemaglutinin titers and number procedures:

Patient number	Haemaglutinin titer before TX	Number of IA prior TX	Number of IA after TX	Follow-up (M)	Last creatinine (umol/l)
1	1:32	4	1	37	155
2	1:8	2	2	26	133
3	1:32	4	2	19	106
4	1:512	9	1	16	124
5	1:16	3	0	5	121
6	1:8	3	0	3	155
7	1:64	2	1	3	80
8	1:32	4	0	2	127
9	1:8	2	0	2	125
10	1:32	6	0	2	84
11	1:32, 1:16	4	0	0,5	130

Results:

There were 5 0, 4 A and 2 B blood group recipients and 4 AB, 3 A and 4 B blood group donors. In 4 recipients, PRA were detectable before transplantation (17, 13, 11 and 2%). Haemaglutinin titers varied from 1:8 to 1:512 and respective number of IA session from 2 to 9 before transplantation. Posttransplantation IA were performed only if titers increased >1:8 during first week and in 5 patients no IA were not performed while in the rest 1-2 IA session were performed (Table 1, Table 2). There were 2 antibody mediated rejections with Luminex de novo DSA successfully treated with steroids and plasmapheresis only therapy and 1 borderline changes. Follow-up varied from 1 to 37 months. In 3 months protocol biopsies C4d positivity were detected in 4 patients including patient with highest initial titer. At the end of the follow-up all patients have excellent kidney graft function (serum creatinine 80 to 155 µmol/L).

Conclusion:

In conclusion, inclusion of only low risk kidney transplant recipients seems to be option for safe ABOi programme initiation in the transplant center without previous knowledge of this method.

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