Assessment of Tacrolimus based vs. Neoral based maintenance immunosuppressive regimens among kidney transplant recipients: Kuwait experience.

Authors

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Introduction

- **Both Tacrolimus and Cyclosporine are calcineurin inhibitors and serve as critical components of the immunosuppressive regimen post-transplant. The choice between them often depends on the individual patient's response, side-effect profile, and the transplant center's protocol.**
- **The comparison between Tacrolimus and Neoral (a formulation of Cyclosporine) in low-risk kidney transplant patients has been a subject of this study.**

Patients and methods

- **In this retrospective study that aimed to compare between Tacrolimus and Neoral (a formulation of Cyclosporine) based immunosuppressive regimens in low-risk kidney transplant recipients.**
- **In our cohort, 1077 Kidney transplant recipients (KTR) were identified as low risk patients and were maintained on calcineurin inhibitors. Patients were categorized into two groups: group 1 with Tacrolimus based regimen (n= 505) and group 2 with neoral based regimen (n=572). The demographic data were recorded in addition to the clinical outcomes, complications.**

Results

- **Patients in the two groups were comparable regarding the demographic data except for higher percentage of patients who received deceased donor grafts and higher number of patients with pretransplant co-morbidities($p<0.05$). The number of patients in Tac. Group received more induction (basiliximab) than CsA group and had higher % of DGF. CMV viremia was more prevalent among CsA group ($p<0.05$). The graft outcome in Tac. Group was significantly more better than CsA group($p<0.05$) with no impact on the patient outcome($p>0.05$).**

Results

Demographics of the studied patients

	Total cases (N=1077)	Tac group 1 (N= 505)	CsA group 2 (N=572)	P value
Age in years (Mean ±SD)	56.8±10.8	51.57±12.4	52.1±12.3	0.329
Sex: Male/Female	44/35	298/207	357/572	0.254
Nationality: Kuwaiti/Non-Kuwaiti	59/20	4/3	55/17	0.308
Original kidney disease:				
Diabetic nephropathy	188	84	104	
Glomerulonephritis	284	109	284	
Hypertension	67	31	67	
Others	538	281	117	<0.001
Dialysis modality:				
Hemodialysis	734	323	411	
Peritoneal dialysis	113	42	71	
Preemptive	172	86	86	0.19
Donor type: Live/cadaveric	947/100	412/80	535/20	<0.001
Graft function:				
Immediate	754	325	429	
Slow	193	98	95	
Delayed	59	35	24	0.003
Induction:				
None	300	91	209	
Basiliximab	777	414	363	<0.001
HCV POSITIVE	57	12	45	<0.001
CMV IgG positive	940	386	516	0.013
Pre transplant HTN	816	332	484	0.019
Pre transplant DM	280	113	167	0.37
Pre transplant IHD	171	78	93	0.55
TB Pre transplant	303	98	205	<0.001
Graft outcome:				
Functioning	777	350	427	
Failed	170	44	126	
Lost follow up	23	11	12	<0.001
Patient survival:				
Living	868	373	495	
Dead	97	31	66	0.10

Post-transplant complications

	Total cases (N=1077)	Tac group (N= 505)	CsA group (N=572)	P value
Post-transplant diabetes mellitus	176	77	99	0.20
Antibody mediated rejection (ABMR)				
Early(within 3 months)	9	4	5	
Late(after 3 months)	28	9	19	0.50
Focal segmental glomerulosclerosis				
Primary	25	11	14	
Secondary	15	9	6	0.32
Recurrent	5	2	3	0.60
BK viremia	112	41	71	0.63
BK nephropathy	15	5	10	0.70
CMV viremia	166	57	109	0.049

Renal function and laboratory parameters in the studied groups

Variables	Total cases (N=1077)	Tac group (N= 505)	CsA group (N=572)	P value
Serum creatinine (Mean ± SD)				
Basal	133.7±72.7	141.1±99.7	133±70.5	0.78
6 months	137.1±71.3	174.8±88.1	133.3±69.1	0.14
1-year	136.2±84.9	151.7±101.7	134.7±83.3	0.61
3- years	124.2±61	139.1±77.2	121.5±59.6	0.52
Creatinine rise compared to basal (%)	4.6±18.1	0.44±19.9	0.55±13.3	<0.001
Pre-contrast S albumin	32.8±4.5	31.8 ±4.5	33±4.8.	0.55
Pre-contrast Hemoglobin	116.1±17.4	105.5±8.4	117.1±17.8	0.09
Pre-contrast weight	79.37±17.9	83 ±21.6	79 ±17.65	0.57
Pre-contrast height	162±9.8	161.6±11.2	162±9.8	0.92
Pre-contrast BMI (Mean ± SD)	30.6±7.1	31.4±10	30.6±6.9	0.78

Conclusion

- **Tacrolimus can be a viable option for low-risk kidney transplant patients, potentially offering benefits in terms of infection rates and graft outcome. However, individual patient factors and risks must always be considered when choosing an immunosuppressive regimen.**