

EFFICACY OF THE NEW DESENSITIZATION PROTOCOL FOR ABO INCOMPATIBLE LIVING DONOR KIDNEY TRANSPLANTATION USING LOW DOSE RITUXIMAB WITHOUT PLASMAPHERESIS

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OBJECTIVES

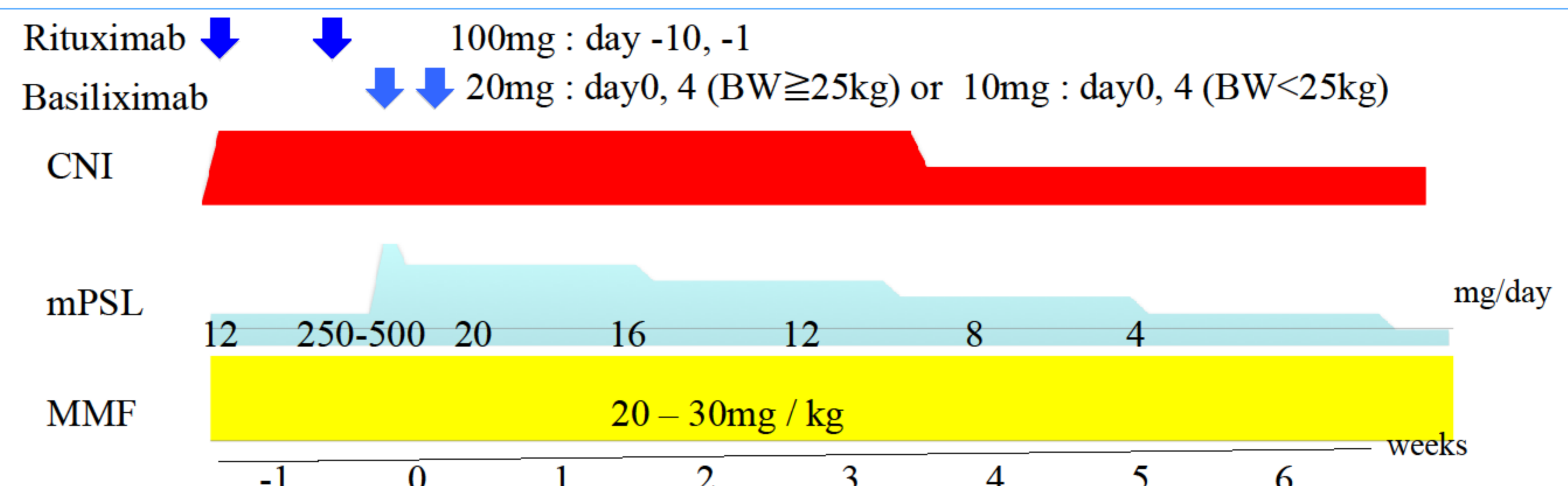
In the background of the serious organ shortage, much effort has been made in Japan to overcome ABO blood type barrier in kidney transplantation.

It was reported that splenectomy (Spx) and plasmapheresis (PP) with conventional immunosuppressant were effective in ABO blood type incompatible kidney transplantation (ABOiKT)¹. However, it was recently shown that Rituximab (RIT) could completely substitute for Spx^{2,3}. In this study, we investigated whether the new protocol using low dose RIT without PP could be effective for ABOiKT with low anti-donor blood type antibody titer.

METHODS

Fifty-seven recipients, who had ABOiKT between August 2006 and December 2014, were enrolled in this study. All patients received immunosuppression protocol shown the below and never underwent posttransplant PP.

PP used to be routinely treated 1-3 sessions as preconditioning to reduce anti-A/B antibodies below $\times 16$ before ABOiKT until August 2010. Then, the new protocols without pretransplant PP were introduced for the patients who had anti-A/B antibodies ≤ 64 before ABOiKT. To evaluate this new protocol for ABOiKT, graft survival, clinical acute rejection rate, the incidence of infection and status of ABGAb were compared between ABOiKT with or without PP.

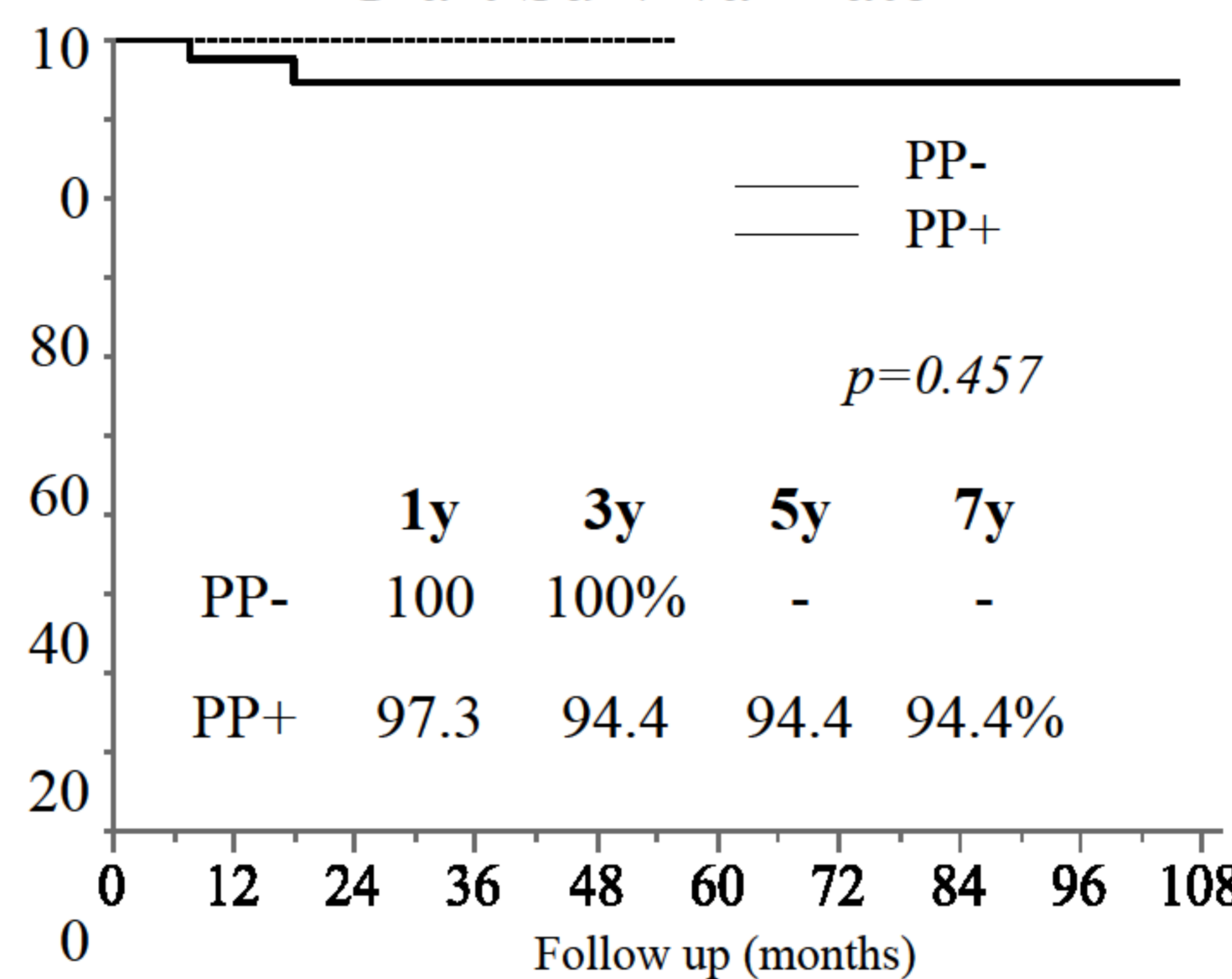


RESULTS

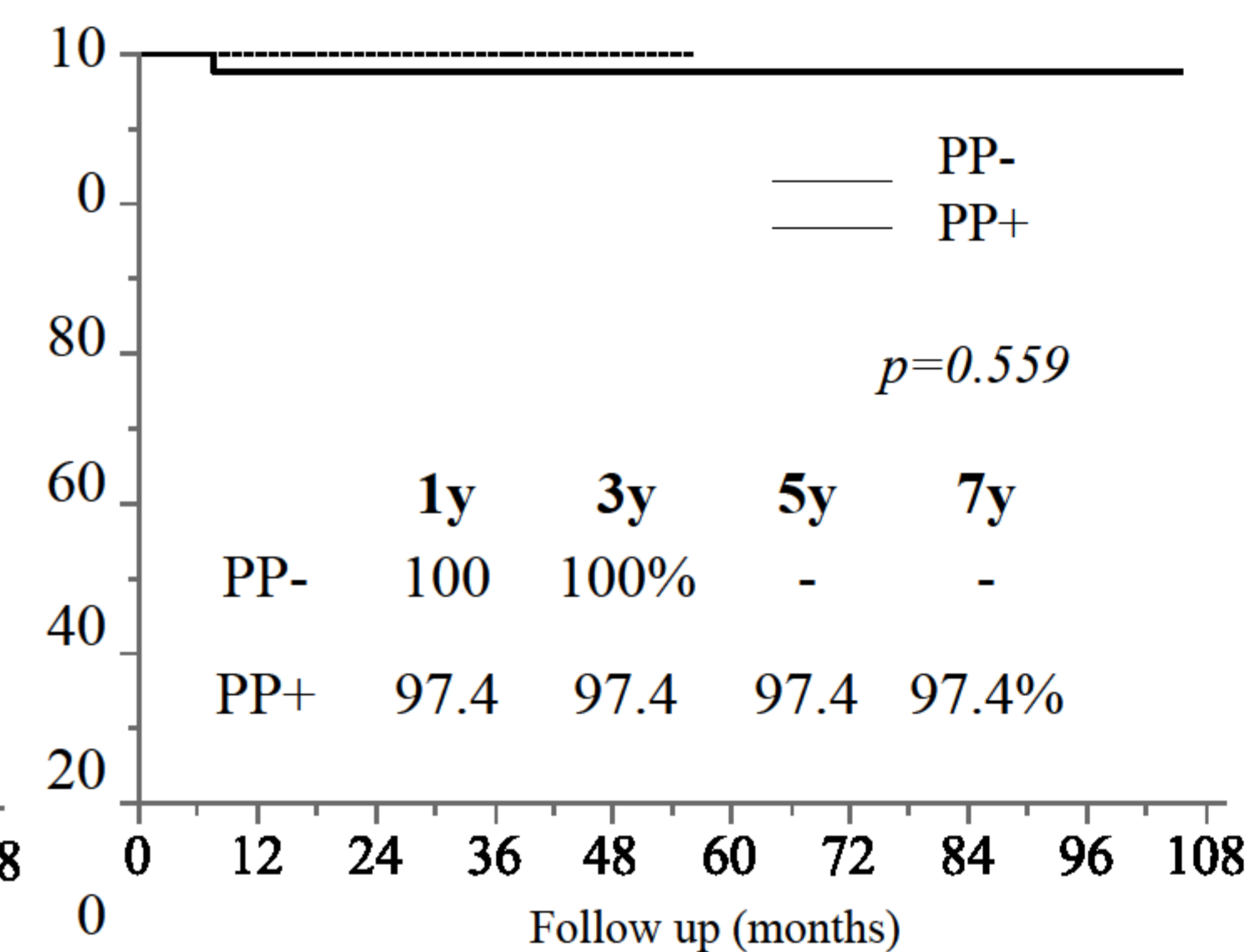
Patients' Characteristic

	PP+ n=40	PP- n=17	P value
Age (y.o.)	38.2 (4.9 – 69.6)	40.8 (6.1 – 66.3)	0.464
Gender (M/F)	24 / 16	10 / 7	1.000
Donor Age (y.o.)	54.4 (31.4 – 71.1)	46.9 (31.4 – 71.1)	0.542
Donor Gender (M/F)	19 / 21	8 / 9	1.000
Original Disease CGN/CAKUT/DM/others	9/8/5/18	4/5/2/6	0.864
HLA mismatch			
AB	1.9 ± 1.0	1.8 ± 1.3	0.808
DR	1.0 ± 0.6	1.1 ± 0.7	0.562
CNI (Tac/CsA)	15 / 25	8 / 9	0.563

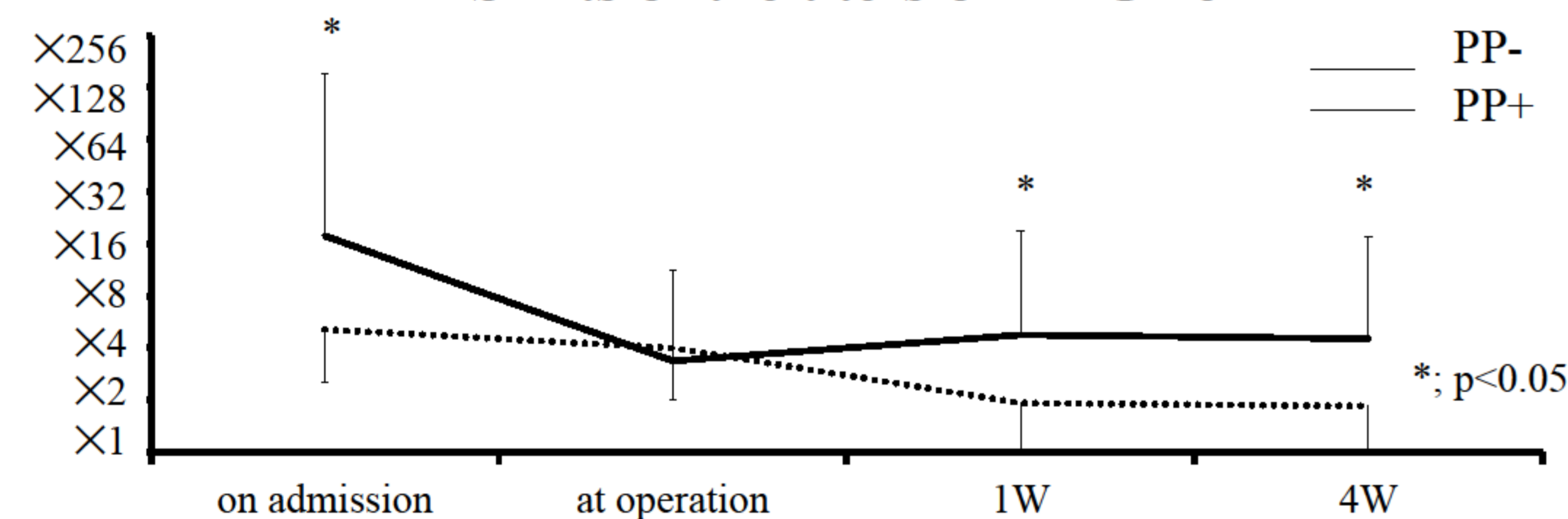
Graft Survival Rate



Patient Survival Rate



Shifts of the titers of ABGAb



Acute Rejection within 1 year

	PP+ n=40	PP- n=17	P value
Clinical Rejection			
Antibody mediated rejection	1 (2.5%)	0 (0%)	1.000
T cell mediated rejection	4 (10%)	1 (5.9%)	1.000

Infectious Complications

	PP+ n=40	PP- n=17
Cytomegalovirus	10 (25.0%)	4 (23.5%)
Adenovirus	2 (5.0%)	1 (5.9%)
Urinary Tract Infection	5 (12.5%)	1 (5.9%)
Upper Respiratory Infection	0 (0%)	2 (11.8%)
viral	9 (22.5%)	0 (0%)
bacterial	4 (10.0%)	1 (5.9%)
fungal	2 (5.0%)	1 (5.9%)

Graft Function at 1 month and 3 months

	PP+ n=40	PP- n=17	P value
eGFR at 1 month (ml/min.1.73m ²)	52.6 (26.3 – 98.3)	50.7 (31.3 – 114.9)	0.924
eGFR at 3 month (ml/min.1.73m ²)	46.3 (22.5 – 89.5)	45.3 (35.4 – 100.5)	0.577

CONCLUSIONS

Our current desensitization protocol using low dose RIT without Spx was effective for ABOiKT. Moreover, the safety were similar between the protocol with or without PP. Therefore, pretransplant antibody removal would not be prerequisite for ABOiKT with low ABGAb.

REFERENCES:

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- Sawada T, et al., Successful A1 to O, ABO- incompatible kidney transplantation after a preconditioning regimen consisting of anti-CD20 monoclonal antibody infusions, splenectomy, and double filtration plasmapheresis. *Transplantation* 2002; 74: 1207
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