

Comparison of Anti-Human T-Lymphocyte Immunoglobulin (r-ATLG - Grafalon) vs Anti-Thymocyte Globulin (r-ATG - Thymoglobulin) in Kidney transplant: A 5-year follow-up study

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Introduction

Induction agent in renal transplant is an essential element. In Living Donor Kidney Transplantation its practice is varied in India from no induction to different agents.

T cell depletion agents, Thymoglobulin (ATG) and Grafalon (ATLG), are commonly employed as induction agents in kidney transplantation

This study aims to assess the short- and long-term outcomes of kidney transplants at our centre focusing on the use of these agents.



AIM

- To look into graft outcome of patients who received Thymoglobulin (ATG) and Grafalon (ATLG) as an induction agent for Living Donor Kidney Transplant.



Objective

- To compare the graft function between the two T Cell depleting agents.
- To compare the Reoccurrence of Denovo Diseases between two groups.

METHODOLOGY

This retrospective study analysed data from Ktx patients at a tertiary care hospital in INDIA, between 2017 and 2024. Of the 581 patients included, 375 received Thymoglobulin and 206 received Grafalon as induction therapy.



All the patients received standard triple immunosuppressant: Tac, EC-MPS and Prednisolone for maintenance.



Follow-up included monitoring for graft rejections, infections, denovo diseases, and overall graft survival.

Results – Demographic

Parameters	Thymoglobulin (n=375)	Grafalon (n=206)
Age (years)	41.4 ± 13	39.13 ± 12.56
Age range (years)	10 to 68	10 to 68
Gender		
Male	279(74.4%)	180 (87.3%)
Female	96(25.6%)	26 (13.4%)
Body weight (Kg)	61.83 ± 9.4	57.89 ± 10
Native kidney disease		
Hypertensive Nephrosclerosis	75(20%)	60 (29.1%)
Diabetic nephropathy	56(14.9%)	35 (16.9%)
CGN	234(62.4%)	98(47.5%)
CIN	14(3.7%)	10(2.6%)
Anti GBM	1	2
CKDu	0	1

Results – Demographic

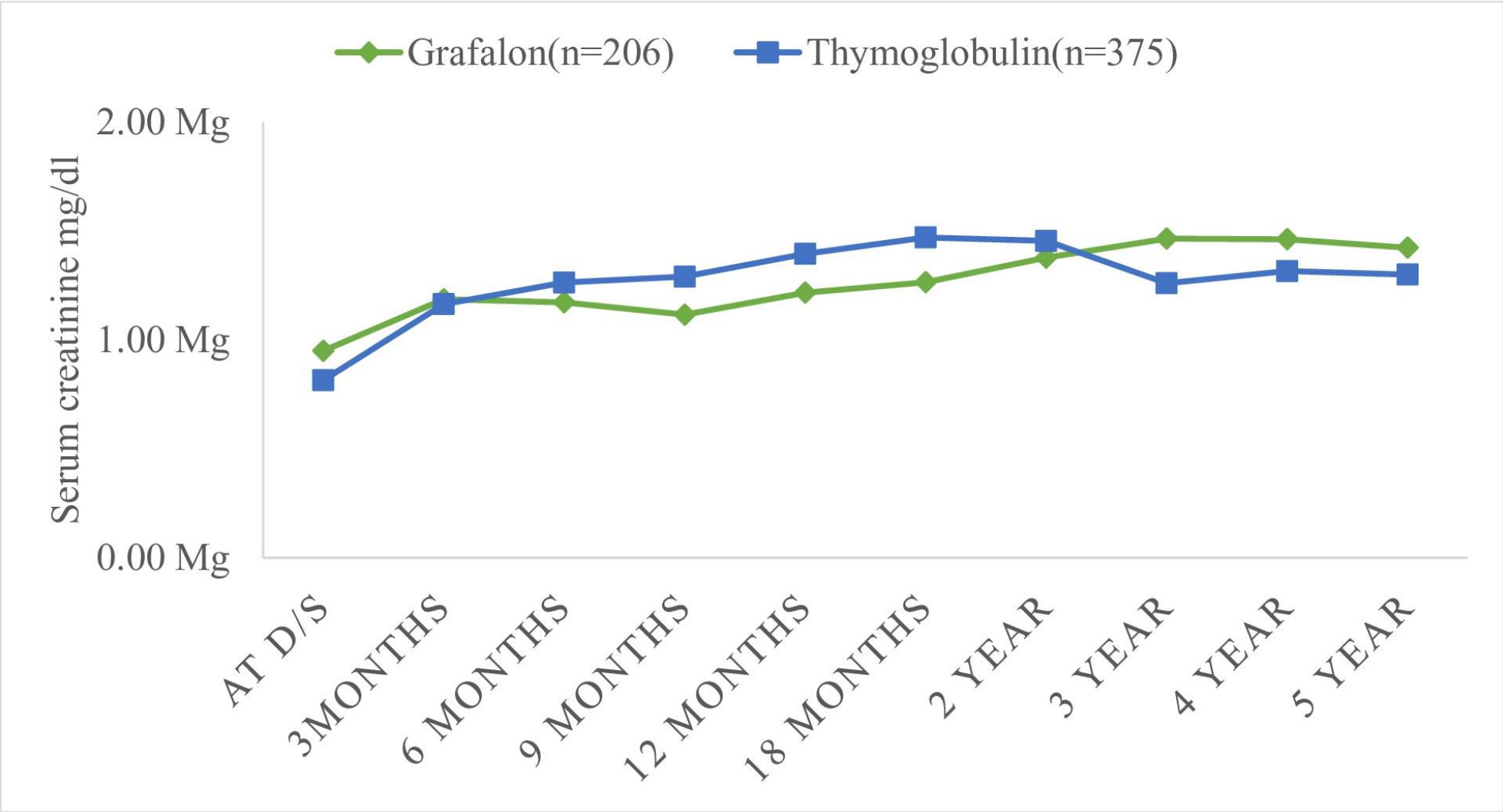
Parameters	Thymoglobulin (n=375)	Grafalon (n=206)
ABOi Transplant	40(10.6%)	11(5.3%)
HIV Positive	1	0
HBsAg Positive	3	12
HCV Positive	10	14
Donor details		
Donor Age (years)	39.78±13.6	41±13.7
Donor gender		
Male	135(36%)	79 (38.3%)
Female	240(64%)	127(61.6%)
Mean Cumulative Dose (mg/kg)	<u>146.63 ± 35.5</u>	<u>305.1 ± 61.8</u>
Mean±SD (mg/kg)	<u>2.37±1.2</u>	<u>5.4±1.4</u>

Results: Rejection Analysis

Parameters	Thymoglobulin (n=375)	Grafalon (n=206)
Rejections	37(9.8%)	24(11.6%)
Acute cell mediated rejection (ACR)	26	20
• Within 1 month	6	6
• 1 to 6 months	11	8
• >6 months	5	5
• Acute on Chronic Rejection	4	1
Chronic ACR	0	1
Antibody mediated rejection (ABMR)	1	1
Hyper acute Rejection (1 Day)	1	-
Chronic ABMR	9	2
• >1 year	3	2
• <1 Year	7	-
Acute tubular injury	25(6.7%)	15(7.2%)
• Diffuse	16	12
• Patchy	9	3
De-novo disease recurrence	12(3.2%)	3(1.4%)
IgA recurrence	6	1
FSGS recurrence	6	2

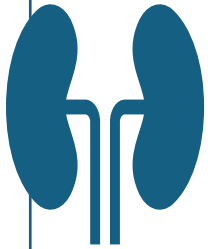
(On rejection parameter Non-significant difference between two groups (p Value =0.54))

Result: Graft Function



(p=0.90, non-significant difference between the two groups)

Conclusion:



Both the short-term and long-term outcomes of kidney transplant recipients receiving Thymoglobulin or Grafalon as induction therapy were similar in terms of graft rejection incidence.



However, Thymoglobulin was associated with a higher occurrence of de novo diseases (this may be an incidental finding or due to some unexplained reasons).



Mechanism action of ATG and ATLG are different. ATG acts as a broader immunosuppression and T Cell depletion compared to ATLG which preferentially acts on the activated T cell.



Good compliance with Oral immunosuppressant can improve graft survival as per the current study.

Thank you

