

## Renal Transplant Experience at GMC & SSH, Nagpur

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### ABSTRACT

Thousands of patients are living on dialysis in State due to kidney failure and over 1,000 patients are waiting for renal transplant. The poor patients cannot afford the high cost of organ transplant in private hospitals. But after approval for kidney transplant centre at Government Medical College and Super Specialty Hospital Nagpur, poor patients under the Mahatma Jyotiba Phule Jan Arogya Yojana (MPJAY) could undergo renal transplantation free of cost.

**Aim :** To evaluate the patient and graft outcome after renal transplantation in a Government Tertiary Care Hospital.

**Material & Methods :** 36 patients with end-stage renal disease, who received 34 live related and 2 cadaveric kidney transplants between February 2016, and October 30, 2018 were analysed retrospectively.

**Results :** Of the 34 live donations, 18 were done by mothers, 3 by sisters and 6 by wives, while 7 males participated in donation. The mean age of donors was 48.18 + 11.66 years. The youngest of recipient was a 15 year boy and oldest was a 64 year male, with a mean age of 32.77 + 11.82years. 30 patients are doing well with functioning grafts including 22 patients at more than one year and most of them are earning livelihood for their family, a boon offered by transplantation. Of the six deaths that occurred, five were attributed to severe sepsis, while one succumbed at home possibly due to cardiac event.

**Conclusions :** With our growing experience and encouraging results we look forward to conduct Dual organ transplants, Swap transplants and ABO incompatible transplants.

### Introduction :

Thousands of patients are living on dialysis in State due to kidney failure and over 1,000 patients are waiting for renal transplant. On one hand waiting list of organ transplantation from cadaver donor is increasing while on other hand patients don't get organ donors due to strict government regulations. These patients have no options left but to continue with dialysis. Previously renal transplants were rarely done in government hospital of the state. The poor patients couldn't afford high cost of organ transplant in private settings. But after approval for kidney transplant centre at Government Medical

College and Super Specialty Hospital Nagpur, poor patients under the Mahatma Jyotiba Phule Jan Arogya Yojana (MPJAY) can undergo renal transplantation free of cost.

Renal transplantation programme was started at SSH Nagpur in February 2016 when first live related transplantation was performed with mother donating to her 19 year old daughter. Since its success, transplants have been conducted routinely at SSH, Nagpur.

### Material & Methods :

36 patients with end-stage renal disease, who received 34 live related and 2 cadaveric kidney transplants between February 2016, and October 30, 2018 were retrospectively analysed.

### Results :

Renal transplantation programme was started at SSH Nagpur in February 2016 when first live related transplantation was performed with mother donating to her 19 year old daughter. Since its success, transplants have been conducted routinely at SSH Nagpur. Total 36 renal transplants have been

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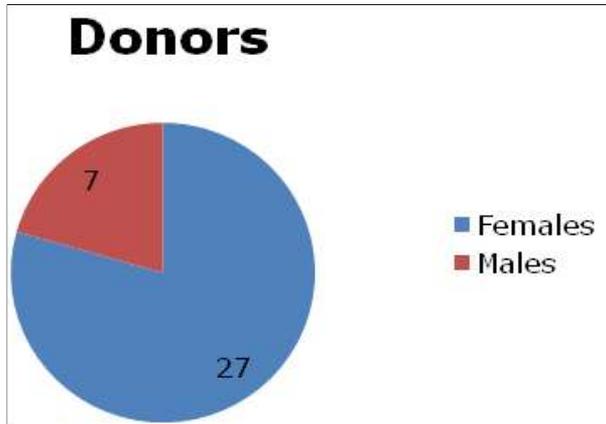
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performed till date of which 34 were live related & 2 were cadaveric. Of the 34 live donations, 18 were done by mothers, three by sisters and six by wives, while only seven males participated in donation & shows determination & grit of women towards donation. The youngest of recipient was a 15 year boy and oldest was a 64 year male. Donors of the 36

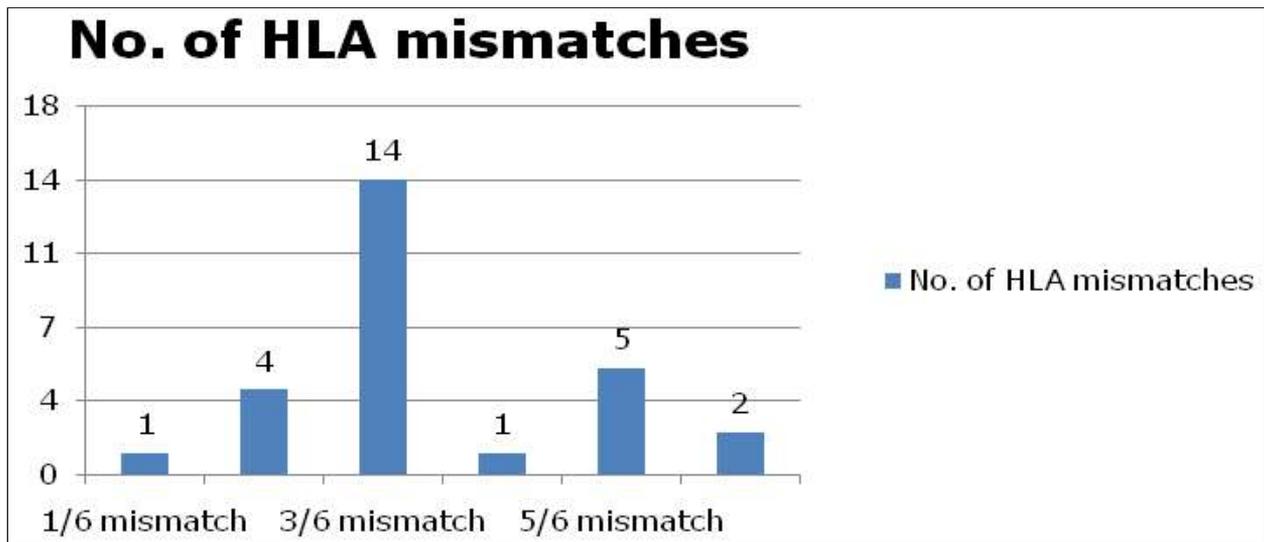


transplants performed, 25 patients have been benefitted by MPJAY scheme. After thorough evaluation & getting fitness from respective specialities with negative Lymphocyte cross matching, patients were proceeded for transplant surgery. All patients received pretransplant vaccination in the form of Hepatitis B, Pneumococcal & Influenza vaccines. In Living donor transplants, patients were also required to get HLA typing and State Authorisation Committee approval. Since all the Living donor transplants

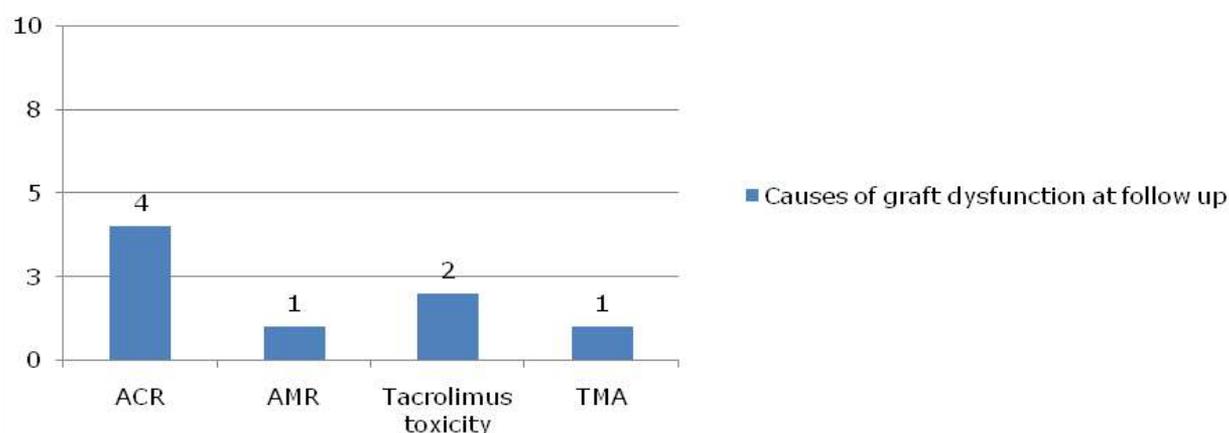
were related, haploidentical HLA matching (3/6) was observed in most of them. All the Live transplants were HLA & ABO compatible.

Induction agents were used in recipients who were considered to be at moderate to high risk, given prior to surgery, of which 12 received rabbit ATG (anti Thymocyte globulin) while 4 received Basiliximab (IL2 receptor inhibitor). Maintenance agents used were triple drug combinations consisting of Steroids, Mycophenolatemofetil (antimetabolite) and Tacrolimus/Cyclosporine (calcineurin inhibitor) while two patients were put on Sirolimus (mTOR inhibitor) + Steroids + Mycophenolate mofetil regime in view of adverse effects due to Tacrolimus.

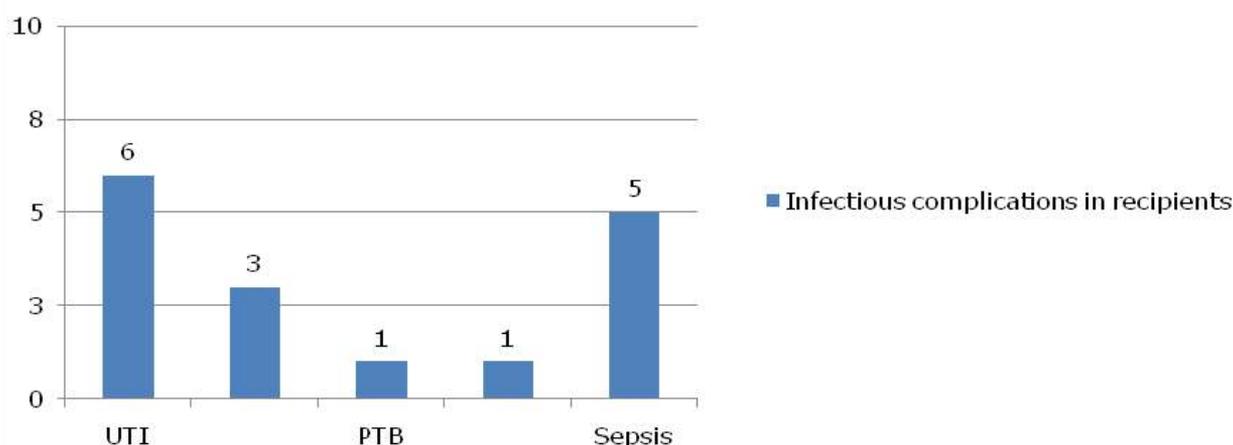
Postoperatively Delayed graft functioning with dialysis requirement was seen in 3 patients. Graft biopsy revealed ischaemic ATN in all 3 with nonrecovery in two of them & complete recovery in the third. All other recipients had normal graft function. Surgical complications included wound gaping in two patients & perinephric hematoma in two (including one donor) requiring re-exploration. All donors (except one) had a stable postoperative course and normal renal functions at follow up. No mortality was observed in any donor. Average hospital stay for recipients was 10-14 days. At follow up 8 recipients had graft dysfunction. Graft biopsies performed revealed Acute Cellular rejections (ACR) in four, with all showing good



## Causes of graft dysfunction at follow up



## Infectious complications in recipients



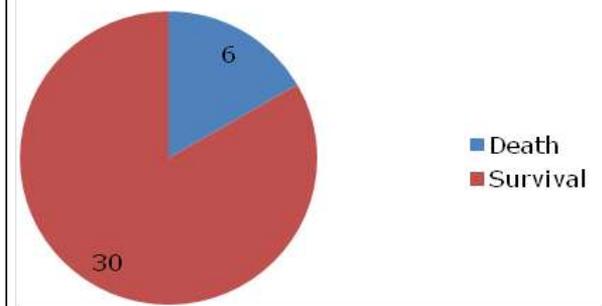
response to pulse steroids alone while one patient required ATG to reverse rejection; Acute Antibody mediated rejection (AMR) in one who was treated with rituximab with partial recovery; Acute tubular injury due to Tacrolimus (Tacrolimus toxicity) in two, which responded to reduction in dosing & Thrombotic microangiopathy (TMA) in one which responded to switch over from Tacrolimus to Sirolimus.

Infectious complications included urinary tract infections in six recipients requiring hospitalisation, de novo/ recurrent HCV infection in three, pulmonary tuberculosis in one, epididymo-orchitis in

one and severe sepsis in five (with subsequent demise). Other complications included New Onset Diabetes in two, Deep venous thrombosis in one & persistence of Secondary Hyperparathyroidism in one. Drug related side effects included Acne in 12, Tremors in 8, Peripheral neuropathy in 2, Gum hypertrophy in 1 & Hirsutism in 1 all of which responded to drug/dose modifications.

Of the six deaths, five were attributed to severe sepsis, while one succumbed at home possibly due to cardiac event. Five of the above died with a functioning graft while only one had a non-functioning graft. All other recipients are doing well

## Patient survival



with functioning grafts and most of them are earning livelihood for their family, a boon offered by transplantation.

### Discussions :

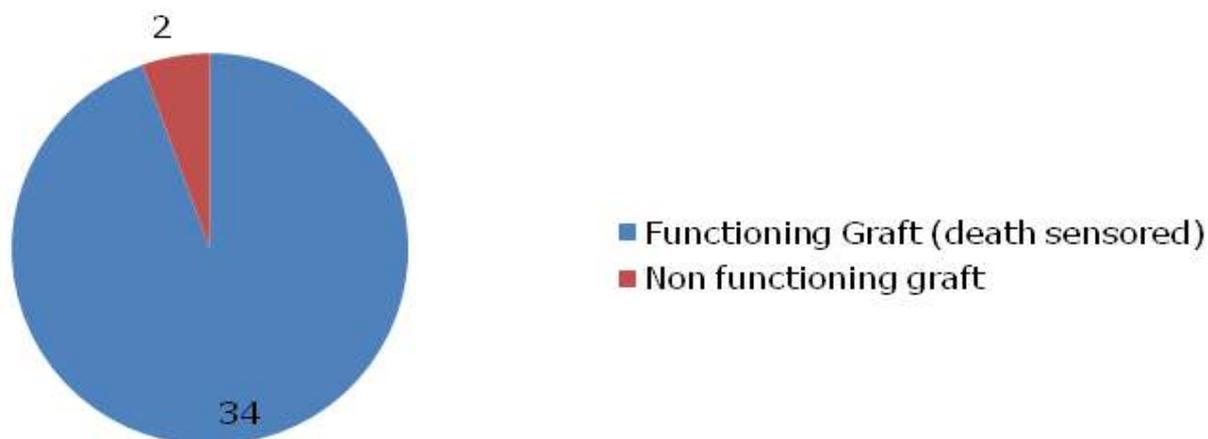
In India, only about 10% of end-stage renal disease patients ever receive any form of renal replacement therapy and only 2% undergo kidney transplantation.<sup>1</sup> Total 36 renal transplants were performed at SSH Nagpur between February 2016 and October 30, 2018 of which 34 were live related & 2 were cadaveric. As deceased organ donation is still in its infancy in India, living donor transplants account for the large majority of transplants. Of the

34 live donations, 27 were by the females which is a common scenario across various transplant centres in India. Higher incidence of kidney disease in men, fear of losing the earning male member, and perception of renal donation as an extension of responsibility toward family in females have been suggested as reasons for female preponderance among living donors.<sup>2</sup> The recipient age varied from 15 to 64 years, with a mean age of 30 years. Of the 36 transplants performed, 25 were benefitted by MPJAY scheme.

HLA typing done revealed 3/6 mismatching amongst most pairs (14 out of 36), while 8 pairs had more than 3/6 mismatch. Twelve patients (33%) deemed to be of high risk (in view of prior multiple transfusions or multiple pregnancies) received rabbit ATG as induction agent, while 4 patients with moderate risk received Basiliximab. Low risk group (20 patients) did not receive any induction. Standard maintenance protocol consisting of Prednisolone, Mycophenolate & Tacrolimus was used in 34 patients, while 2 received Prednisolone, Mycophenolate & Sirolimus in view of Tacrolimus toxicity.

Postoperatively 3 patients had Delayed graft function. Graft biopsy revealed ischaemic ATN in all 3, which happens to be most common cause of

## Graft survival



delayed graft function.<sup>3</sup> All other recipients had normal graft function. Surgical complications included wound gaping in two patients & perinephric hematoma in two (including one donor) requiring reexploration. All donors (except above) had a stable postoperative course and normal renal functions at follow up.

At follow up 8 recipients had graft dysfunction. Graft biopsies revealed acute cellular rejection in 4, acute antibody mediated rejection in 1, Tacrolimus toxicity in 2 & thrombotic microangiopathy in 1 patient. The rejection rate was 14% which matches the number quoted in most studies as 10-20%<sup>4</sup>. Cellular rejections responded to pulse steroids in 3 patients & ATG in 1, antibody mediated rejection in 1 showed partial response to Rituximab, Tacrolimus toxicity responded to reduction in dosing & Thrombotic microangiopathy responded to switch over from Tacrolimus to Sirolimus. Infectious complications were seen in 16 patients (44%) with most common being UTI which is also documented in other studies.<sup>5,6</sup>

Patient survival rate was 30/36 (83%) till date with most (5 patients) of the deaths due to sepsis while graft survival rate was 34/36 (94%) till date.

### **Conclusions :**

With our growing experience and encouraging results we look forward to conduct Dual organ transplants, Swap transplants and ABO incompatible transplants.

### **References :**

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