

## **WARM ISCHEMIA TIME IN ROBOTIC DONOR NEPHRECTOMY (LIVING) VS OPEN DONOR NEPHRECTOMY (LIVING) AND OUTCOME.**

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### **ABSTRACT**

**Introduction:** Kidney transplant is the most valuable surgery to improve the survival and change in life style quality in the end stage of renal dises in living robotic donor nephrectomy reduces waiting time for resipient patient and avoid more Hemodialysis.

**Aims:** The aim of the study is to analyze the effect of graft kidney short and long time outcome. After Robotic living donor nephrectomy with minimal hospital stay.

**Materials and Methods:** This study conducted on patient admitted for renal transplant both the donor and resipient posted for OT for living robotic donor nephrectomy and also posted for open donor nephrectomy in Apollo malty specialty Hospital Kolkata all patient were older than 20 years both the donor and resipient in the study analysis of robotic donor nephrectomy of warm ischemia time on delayed graft function rate of decline in in serum creatinine in the first 10 days and change of creatinine at 3 month Acute and delayed graft rejection.

**Result:** It nephrectomy Robotic (Living) is a safe procedure immediate kidney allograft function was good with less chance injury in graft kidney, vein, artery, ureter it was performed successfully in all case with a short surgical time with also low morbidity and 0% moriality and minimal hospital stay very less chance in acute and delayed graft kidney rejection with grate cosmetic value.

**Conclusion:** In our study we found that, In nephrectomy Robotic (Living) was better procedure than open donor nephrectomy (Living).

**Keywords:** kidney transplantation, living donor nephrectomy, minimally and robotics.

### **INTRODUCTION**

Kidney transplant is the most valuable surgery to improve the survival and change in life style quality in the end stage of renal dises in living robotic donor nephrectomy reduces waiting time for resipient patient and avoid more Hemodialysis.

Minimize complication risk, other benefit for the living donor patient is less OT time minimal Hospital stay cosmetic value less surgical scar mark minimal injury to allograph kidney, vein

artery, ureter. including graft kidney more length vein, artery, ureter. It is help to resipient patient after transplant kidney work very smooth function well, less change of aorta and delayed graft rejection. This study is done in Apollo malty specialty Hospital in the year 2021 to 2023 January between 20 Robotic living nephrectomy and 20 open donor nephrectomy.

Live kidney donors are healthy individuals who intentionally undergo major surgery to improve the well-being of another individual; as such, maximizing the donor safety during this procedure is of paramount importance. Several surgical techniques have been described for living donor nephrectomy (LDN), including open, pure or hand-assisted laparoscopic, natural orifice transluminal endoscopic surgical (NOTES) and robotic approaches<sup>1,2</sup>. In this view, minimally invasive techniques are increasingly being performed worldwide with the aim to further limit the morbidity of surgery for the donors while ensuring optimal grafts for kidney transplantation<sup>3</sup>. While laparoscopic living donor nephrectomy (LDN) has become a common procedure in most Transplant Centers and has been shown to be associated with shorter hospital stay, less pain, and faster recovery as compared to open surgery<sup>4,5</sup>, the use of robotic surgery in this setting might further improve its perioperative outcomes providing distinct benefits for both donors and surgeons (1). This is mainly due to the advantages of the robotic platform as compared to standard laparoscopy (improved ergonomics, Endowrist technology, magnification and 3D vision). Consequently, robotic LDN has been implemented and is being increasingly performed at referral Centers with expertise in both living donor kidney transplantation and robotic surgery (8–10), with excellent outcomes, comparable to those of pure laparoscopic LDN (1).

### **What is warm ischemia time**

Donor warm ischemia time was the time from clamping of the aorta or renal artery to cold perfusion. Cold ischemia extended from cold perfusion of the kidney to the start of the venous anastomosis it was calculated from the venous anastomosis to removal of clamps after completion of the arterial anastomosis.

### **AIMS AND OBJECT**

The aim of the study is to analyze the effect of graft kidney short and long time outcome. After Robotic living donor nephrectomy with minimal hospital stay.

### **MATERIALS AND METHODS**

- This study conducted on patient admitted for renal transplant both the donor and resipient posted for OT for living robotic donor nephrectomy and also posted for open donor nephrectomy in Apollo malty specialty Hospital Kolkata all patient were older than 20 years both the donor and resipient in the study analysis of robotic donor nephrectomy of warm ischemia time on delayed graft function rate of decline in in serum creatinine in the first 10 days and change of creatinine at 3 month Acute and delayed graft rejection.

### **Labortory - Blood Morphology**

- Coagulation Profile
- Liver Function Test
- Kidney Function Test

- HIV, HBSAg

#### Imaging test

- Chest 'X' Ray PA View
- HRCT
- USG - W/A
- DTPA Scan

Kidney angiography to select Donor Side

#### Kidney Function

- Estimated GFR 24 hr Urine analysis

#### Specilid Medical Consult

- Nephrologist
- Urologist
- Cardiologist
- Anaihelogist

#### Other

- ECG
- 2 D ECHO

### RESULT

#### Parameter Pre / Post Operation in living donor nephrology robotic nephrectomy patient

Pre-Operation	Post Operation	At the time of Discharge
Hb%-14	12.5	13
Creatinine - 5	4.2	1.2
Hb%-13.5	11.2	12
Creatinine – 4.5	4.1	1.6
Hb%-14.2	10.2	11.6
Creatinine – 6.2	5.5	1.4
Hb%-12.6	9.8	11.6
Creatinine – 5.2	5.0	1.1
Hb%-13	11.2	12.0
Creatinine - 6	5.4	1.5

#### Parameter Pre / Post Operation in living donor open nephrology resipent patient

Pre Operation	Post Operation	At the time of Discharge
Hb%-14	11	12
Creatinine – 5.2	5	2
Hb%-13.6	10.02	11
Creatinine – 6	5.5	2.1

Hb%-12.5	10.6	11.6
Creatinine – 4.5	4.2	1.6
Hb%-12.6	10.2	11.5
Creatinine – 5.5	5.2	1.5
Hb%-11.6	9.8	10
Creatinine – 6.2	6	1.5

Hospital stay for Robotic Donor Nephrectomy patients	Hospital stay for open Donor Nephrectomy patients
3 days	5 days
3 days	5 days
3 days	6 days
3 days	7 days
3 days	5days

### Discussion and Conclusion

Warm Ischemia time in open donor Nephrectomy is maximum 5 minutes, In Robotic Donor Nephrectomy Warm Ischemia time is more than 6 minutes.

It nephrectomy Robotic (Living) is a safe procedure immediate kidney allograft function was good with less chance injury in graft kidney, vein, artery, ureter it was performed successfully in all case with a short surgical time with also low morbidity and 0% mortality and minimal hospital stay very less chance in acute and delayed graft kidney rejection with grate cosmetic value.

In our study we found that, In nephrectomy Robotic (Living) was better procedure than open donor nephrectomy (Living).

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