

A Case Study on Kidney Donation and Transplantation in today's Scenario

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Available online at: www.isroset.org

Received 22nd Dec 2016, Revised 19th Jan 2017, Accepted 5th Feb 2017, Online 28th Feb 2017

Abstract— Kidney Transplantation is an effective approach to us. This paper deals with the study of various techniques involved in successful kidney transplantation and organ donation and their needs in India. With this study we have studied the various methods, types and their needs and also the difficulties and their future aspects. Kidney transplantation is a surgical process in which a healthy kidney is transferred into a patient with end stage organ failure. For Transplantation study especially we have done case study on Kidney/Renal Transplantation and their successful results. We have collected past three years data of Kidney donor and kidney transplantation in India. Our other object of this paper is that people may get information about kidney transformation and their needs and after realization of actual needs, people may aware others and try to aware patients for transplantation and also making aware donors for donation as possible.

Keywords— Organ Donation, Transplantation, Cadaveric, deceased, Analysis, Renal

I. INTRODUCTION

As the world is getting progress, with the same way different types of dangers and uncured diseases are growing rapidly for while organ donation and transplantation is much necessary. Organ Donation is the process of surgically removing an organ or tissue from one person (the organ donor) and placing it into another person. Transplantation is the process of surgically transferring a donated organ into a patient with end stage organ failure [1-7]. Kidney Transplantation or Renal Transplantation is the organ transplantation of a kidney into a patient with ended Stage renal disease. Or Kidney Transplantation is a process of Kidney transformation in which a healthy person (blood relative or any brain dead patient with same blood group) donates his kidney to kidney failure patient. Kidney Transplantation is typically classified as deceased- donor (cadaveric) or living- donor transplantation depending on the source of the door organ [2].

The rest of the paper is organized as follows: Section I contains the introduction of Organ Donation like definitions of the Transplantation and its related information. Section II describes classification of kidney donor and its types and sources. Section III describes different methods of kidney transplantations and their images. Section IV contains related work. Section V contains difficulties of kidney transplantation and statistical analysis of kidney transplantation in India. Section VI explains the Graph representation of kidney transplantation in India. Section VII

contains the suggestion and recommendations. Section VII concludes our aim and future scope of our analysis.

II. TYPES OF KIDNEY DONOR

1. Living Donor
2. Cadaveric/Deceased Donor

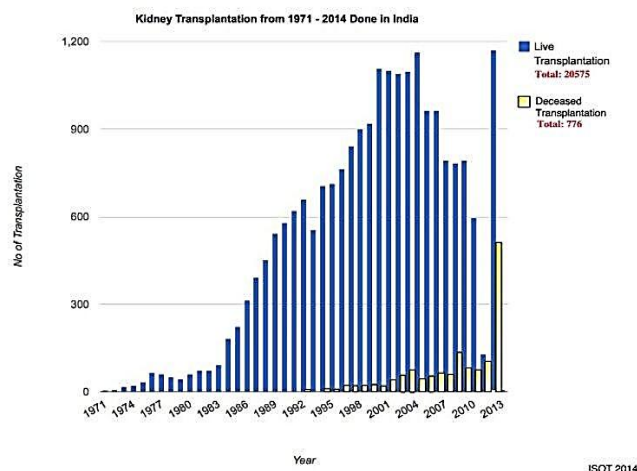


Fig. 1

III. METHODS OF KIDNEY TRANSPLANTATION

There are following methods of Kidney Transformation:

Open Donor Nephrectomy:- In open donor required a healthy person or individual, the donor, to undergoes a major operation where the kidney was removed by an surgical cut in the side using a large incision, but this process gives lots of pain.



Figure 2 Open donor Nephrectomy

Laparoscopic Donor Nephrectomy:- In this type of nephrectomy, a tiny incision are used and the kidney is removed using a scope or any camera or special surgical instruments



Figure 3 Laparoscopic Donor Nephrectomy

Robotic Assistance Nephrectomy:- A robotic assistance nephrectomy is a computer and robotic assistance surgery in which robotic systems are added in surgical procedures. This method is developed for overcome the limitations of pre-existing minimally invasive surgical process and to increase the capabilities of surgeons performing open surgery.



Figure 4 Robotic Assistance Nephrectomy

IV. RELATED WORK

- Prof. Patnik and co-author's describe in his paper "Kidney Transplantation in India: Hopes and Despairs A scientific study of Ethics, Commerce and Law" certain law of kidney donation and transplantation and related data in his research paper.
- Gebriel M. Denovitch describe some methods of kidney transplantation in his book "Hand book of kidney transplantation".
- James F. childress and Catharyan describe in his journal "Journal of the Urology Society of India-topic Robotic assisted ", robotic assisted surgery is very relevant for us.

V. DIFFICULTIES IN KIDNEY TRANSPLANTATION

1. Requiring Blood relative person
2. Blood group matching
3. Indian Constitution Lows for organ donation
4. Lack awareness for donation and transplant
5. Post operative prevention
6. Socio economic Factor
7. Educational Status
8. Immunosuppression

Table 1 STATISTICAL ANALYSIS OF KIDNEY TRANSPLANTATION IN INDIA

S.NO.	YEAR	TOTAL NO. OF NEED	TOTAL NO. OF KIDNEY TRANSPLANTATION (APPOX)
1.	2013	145,000	11,161
2.	2014	200,000	11,570
3.	2015	260,000	17,679

VI. GRAPH REPRESENTATION OF KIDNEY TRANSPLANTATION IN INDIA

Note: X represent - Year and Y represent- Kidney Need (Blue Color) and Kidney Transplant (Red Color).

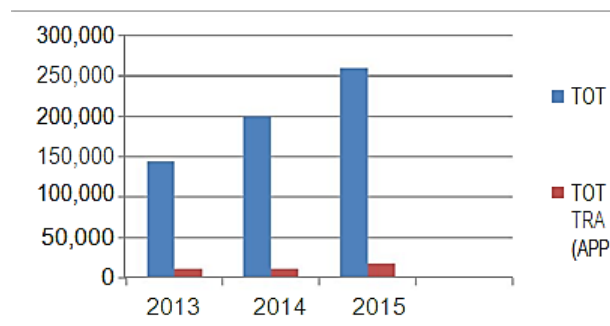


Fig.5

VII. SUGGESTIONS AND RECOMMENDATIONS

By this paper our point of view is that firstly we aware peoples about kidney donation and transplantation and condensing them to give help those who were actually needed of kidney transplantation. We circulate healthy messages throw camps and awareness programs for kidney patients.

VIII. CONCLUSION AND FUTURE SCOPE

Organ donation and transplantation is one of the best inventions of medical science and technology. Due to this technology many people are live their life happily but on the flip side right now the condition of India is critical. My point of view from this research paper is that kidney donation and transplantation is not full fill the need of all required kidney patients, and this is because lack awareness of Kidney donation in the people and difficulties that describe above. In India, the projected number of deaths due to chronic disease was around 5.21 million in 2008 and is expected to rise to

7.63 million in 2020 (66.7% of all deaths).

If people get more information and awareness by some Govt. and other agency, this problem were easily solved.

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