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Editorial Office Address
Department of Forensic Medicine & Toxicology, Third Floor, Library Building, Seth G S Medical College & KEM Hospital, Parel, Mumbai-400 012. Email id: mlameditor@gmail.com Phone: 022-24107620 Mobile No. +91-9423016325

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Original Research Article

A Prospective Study of Organ Transplant in Mumbai Region

Bhise SS[a*], Waghmare SA[b], Jawale SM[c], Wagh RR[d],

[a]Professor & Head, [b]Associate Professor, Department of Forensic Medicine & Toxicology, Dr V M Government Medical College, Solapur, Maharashtra, India.
[c]Associate Professor, [d]Junior Resident, Department of Forensic Medicine & Toxicology, Grant Government Medical College, Mumbai, Maharashtra, India.400008

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Key words
Donor, recipient,
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Abstract

The Human Organ & Transplantation Act provides for the regulation of removal , storage and transplantation of human organs and tissues for the therapeutic purposes and for the prevention of commercial dealings in human organs and tissues . Organ transplantation is the only option to save lives in patients affected by terminal organ failures and improve their quality of life. However, there is a disparity exists between the supply and demand of donated organs, leads to a loss of many lives. The number of organ transplantation have gradually increased in the last two decades and provide excellent results in children and young adults, and are challenging by the growing proportion of elderly transplant patients with co morbidity. This Study was conducted at a tertiary care centre in Mumbai region. Total 209 live transplant cases were studied prospectively which are referred for authorization committee for approval at the tertiary care hospital Mumbai. we have observed that Among the total transplants which were conducted 80% Kidney transplants were conducted and 20 % Liver transplants were conducted. Maximum age group distribution among recipients lies between the age group of 21 to 40 years of age,(48.3%). Maximum age group distribution among donors lies between age group of 41 to 60years of age.(63.6%)

1. Introduction

Organ transplantation is the therapeutic use of human organs involving the substitution of a non-functional organ for another one coming from a donor. Clinical organ transplantation began in the mid 1950s with kidney transplantation procedures between twins[1]. Simultaneously with kidney transplantation, the first heart (1967) and liver (1979) transplantation were performed[2]. The use of human organs for transplantation has steadily increased during the past decades. Organ transplantation is now the most cost-effective treatment for end-stage renal failure, and for end-stage failure of organs such liver, lung and heart, it is the only available treatment.[2] Transplant procedures continue to develop and in the

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***Corresponding author:** Dr. Sadanand S Bhise, Professor & Head, Department of Forensic Medicine & Toxicology, Dr V M Government Medical College Solapur & OSD, DMER, Mumbai, Maharashtra, India. Email: sadanand.bhise@gmail.com (M): +91-9503757487

future may offer practical treatment for other unmet medical needs such as diabetes mellitus and some forms of malignant and metabolic diseases.[3;4] Total 209 live transplant cases were studied prospectively in this study which are referred for authorization committee for approval at the tertiary care hospital Mumbai. Among all these cases 17% females and 83% males were recipients and 67% were females and 33% males were donors. Maximum age group distribution among recipients lies between the age group of 21 to 40 years of age (48.3%). Maximum age group distribution among donors lies between age group of 41 to 60years of age (63.6%).

2. Aims & Objectives:

1. Evaluation of gender related variation among donors and recipients in living organ transplant cases.
2. Evaluation of regional variation among donors and recipients in living organ transplant cases.
3. Evaluation of age related variation among donors and recipients in living organ transplant cases.
4. Evaluation of time period required for the patients to receive donation.
5. Evaluation of complications following the transplant cases.
6. Evaluation of practical problems faced by the patients for delayed transplants or rejected transplants.

3. Material & Methods:

The study was performed on 209 cases referred to the regional authorization committee at tertiary care hospital in Mumbai within the period from 1st January 2016 to 31st May 2017. Various identification data of the recipients and donors like age, sex, religion, along with address were noted from individual interview as per rules of organ transplant act. Analysis was done using HPSS software.

4. Results & Discussion:

Among the total transplants which were conducted 80% Kidney transplants were conducted and 20 % Liver transplants were conducted. Kidney being the major organ donated and demanded. 2 - 2.5 lakhs were the demand for kidneys, of which, only 7500 live donor transplants were conducted in year 2016 indicating the yawning gap between demand and supply. 52.6% cases of End stage renal disease and 15.8% cases were reported of chronic kidney disease who required renal transplants. Ailments like diabetes and hypertension are major lifestyle diseases leading to a rise in kidney diseases.

Table 1: Recipients' Age group frequency distribution

Age group recipients	Frequency	Percent
<20	13	6.2
21-40	101	48.3
41-60	84	40.2
61-80	10	4.8
>80	1	0.5
Total	209	100

Maximum age group distribution among recipients lies between the age group of 21 to 40 years of age, (48.3%). Maximum age group distribution among donors lies between age group of 41 to 60years of age (63.6%) as shown in **Table no - 1 and 2.** Indicative of increased need for life style changes. Maximum distribution of donors lies among female population and Maximum distribution of recipients lie among male population. Most transplants were between Sister to Sister followed by Mother to son and then Wife to Husband.

Table No. 2: Donors' Age group frequency distribution

Age Group of Donors	Frequency	Percent
<20	3	1.4
21-40	46	22.0
41-60	133	63.6
61-80	27	12.9
Total	209	100.0

Table No. 3: Related/ non-related transplant frequency distribution

Related/ non-related transplant	Frequency	Percent
Related	155	74.2
Unrelated	54	25.8
Total	209	100.0

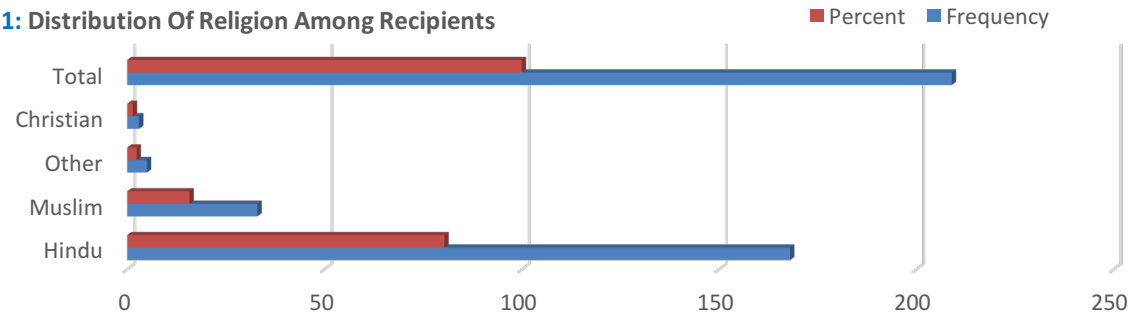
Table No. 4: Recipient- donor relationship

Relationship	Frequency	Percent
Sister to Sister	41	19.6
Mother to son	38	18.2
Wife to Husband	19	9.1

Maximum transplant cases among related recipients and donors (74.2%) as shown in **Table no-3.** In this related transplant most common was found between sister to sister followed by mother to

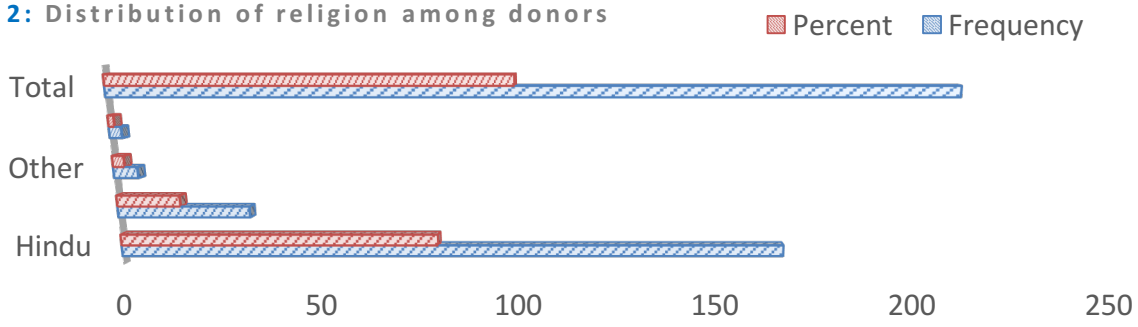
son and wife to Husband (Table no-4). Maximum transplant cases occur among private hospitals. Among all transplants 8 transplants of 209 were conducted at government hospital.

Fig 1: Distribution Of Religion Among Recipients



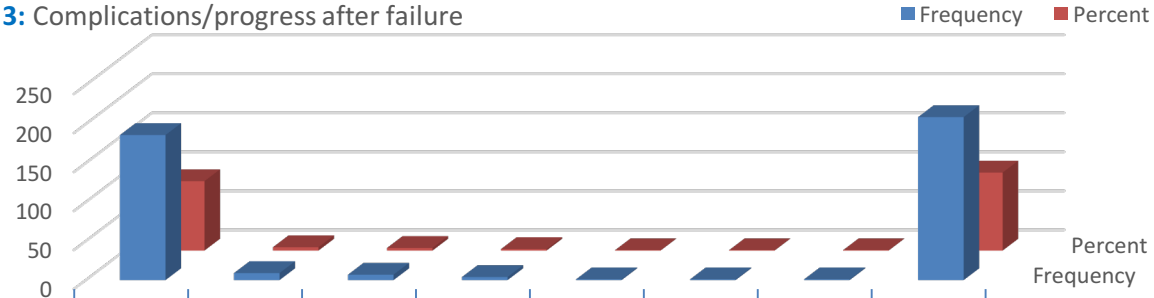
	Hindu	Muslim	Other	Christian	Total
Percent	80.4	15.8	2.4	1.4	100.0
Frequency	168	33	5	3	209

Fig 2: Distribution of religion among donors



	Hindu	Muslim	Other	Christian	Total
Percent	79.9	15.8	2.9	1.4	100.0
Frequency	167	33	6	3	209

Fig 3: Complications/progress after failure



	no complications	infection	death	not done	second transplant	reoperate	on hold	Total
Frequency	186	9	7	4	1	1	1	209
Percent	89.0	4.3	3.3	1.9	0.5	0.5	0.5	100

This indicates increasing need for promoting live transplants at government hospitals. Increased live transplant cases at government hospitals will also help cap down the expenses required for transplant. 24.4% of Chronic liver disease required Liver transplants. 1% cases were complicated of chronic Liver disease with Spontaneous bacterial peritonitis and renal failure.

In 3.8% cases of Swapping were reported. For unmatched cases, Swapping is an important option. This will help reduce the numbers on waiting list. Waiting period extended from 4 months to 4 years. Government initiatives are required for easier and faster transplant services to deal with the waiting period. If we see distribution of religion among recipients and donors, it is commonly seen in Hindus (**Fig 1 & 2**). 4.3% cases experienced infection after transplant and 3.3% cases experienced death after transplants (**Fig-3**). In post transplant communicating sessions with the patients having complications like infections, drop outs of immunosuppressive drugs were noted(**Fig-3**). Reason for post-transplant drop outs in medication was increased financial burden in most cases. Of the total 209 cases approached, 2 cases were rejected by the State transplant committee for objectionable causes suspicious of authenticity of documents(**Fig-4**).

Maximum live transplant cases which were referred to State Authorization committee are from Maharashtra followed by Gujarat, Jharkhand, Uttar Pradesh and seven foreign national cases noted from Tanzania, Iraq and Yemen. Post-transplant scrutiny revealed that around 60% population were comfortable in communicating about health problems after transplant. 70% population were satisfied by the transplants and service establishing the dignified goal of the very initiation of the Act.

Conclusions:

While interviewing, donors should be interviewed separately to exclude possibilities of victimization of donors. Donors being maximum female population detailed scrutiny should be done if altruistic approach was the reason for transplant. All the transplants should be scrutinized by State Authorization committee. There should be uniform State Authorization rules among all the States. While interviewing, donors should be interviewed separately to exclude possibilities of victimization of donors. Donors being maximum female population detailed scrutiny should be done if altruistic approach was the reason for transplant. All the transplants should be scrutinized by State Authorization Committee Uniform State Authorization rules are required among all the States.

Information is the key to catalyze change-

- Increased awareness among population about cadaveric transplant.
- Every brainstem death should be notified in all the hospitals.
- Brain-death cases among pediatric population should be also considered as kids are most hit in waiting scenarios.
- Since 2008, around 50 children are waiting for various organs.

In case of Dead Body Organ Donation -There should be one team in each hospital for organ retrieval along with other team for post-mortem. Green traffic corridors which are established in Tamil Nadu, Kerala and Karnataka should be done everywhere whenever required. Policy decisions which are done in Madhya Pradesh that is 5 lakhs medical cover is extended to 2 Adults and 2 minors among donors, should be done all over country. Foreign delegate's relationship status confirmation should be done strictly by the Embassy. Language related problems while dealing with foreign nationals should be solved by language translators. Socioeconomic status should be scrutinized in detail in all cases. Detailed scrutiny by State Authorization committee of relationship status and socio-economic status with the help of police officials will help decrease mal-practices.

Community Impact:

- This study helped analyze the age, gender and regional variation among transplant cases.
- Post-transplant scrutiny and communication helped to analyze the satisfaction of the health service provided to the patients.
- Post-Transplant communication helped to analyze patient's problems for non-compliance in medications.

- This will help evaluate and formulate further checklist during transplant cases.
- Such continuous assessment will help render improved service to the society.

References:

1. Manara, A. R.; Murphy, P. G.; O'Callaghan, G. (2011). "Donation after circulatory death". British Journal of Anaesthesia. 108: i108–i121. doi:10.1093/bja/aer357.
2. WHO Guiding Principles on human cell, tissue and organ transplantation, Annexed to World Health Organization, 2008. Archived 3 March 2016 at the Wayback Machine.
3. Organ trafficking and transplantation pose new challenges Archived 15 February 2014 at the Wayback Machine.
4. Frohn C, Fricke L, Puchta JC, Kirchner H (February 2001). "The effect of HLA-C matching on acute renal transplant rejection". Nephrol. Dial. Transplant. 16(2): 355–60.