

Invited Article

Heart Transplantation and Deceased Organ donation - The Story from Gujarat



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Heart transplantation is an established form of treatment for advanced heart failure in the modern world since the last 40 to 50 years. Over the past ten years, the number of heart transplants performed worldwide has increased by more than 300%, and in the US, it has increased by more than 400%. In western countries, especially in North America the number of heart transplants took off in a steep way after 1980s reaching to almost 3000 to 4000 heart transplants annually. It has reached plateau because of the number of organ donations that could be achieved.

In India, the first successful heart transplantation was performed at the All India Institute of Medical Sciences, Delhi in 1994. However, the number of heart transplants did not pick up until 2010. In fact, only in 2019 India reached its milestone of performing 1000 heart transplants, almost 25 years after the Transplantation of Human Organs Act passed by the Government of India. It is quite evident that the deceased organ donation is very less in numbers in India compared to the number of organs required for transplants. Only after 2010, the organ donation rate gradually picked up particularly in southern India and simultaneously heart transplantation started taking its stride in southern states. However, in western India, there was no trace of heart transplantation happening though the number of organ donation was steadily increasing in some parts specifically in cities like Surat, Bhavnagar and Rajkot in Gujarat.

Support from reputed institutions like Institute of Kidney Diseases and Research Centre (IKDRC) and non-governmental organizations (NGOs) spearheading awareness helped reaching this height. It so happened that Surat became the city with maximum number of organ donations in the country in recent years, but surprisingly there was no heart transplant centre in the city. The number of heart transplantation could be an ideal indicator of deceased organ donation status of any particular state or country. The statistics seen initially in Tamil Nadu, Kerala, and Andhra Pradesh in the early 2010 and later in Gujarat and Maharashtra clearly demonstrates that heart transplantation can act as a catalyst to increase deceased organ donation in the country.

In 2016, the CIMS Hospital in Ahmedabad, received its heart transplantation licence and the first heart transplantation of Gujarat was performed on 19th December 2016. With the heart transplant, which is undoubtedly the most celebrated and glorified transplant procedure, the awareness about organ donation has rapidly increased reaching to every corner of the state.

Between 2017 and 2019, there was almost 20% increase in the deceased organ donations in Gujarat. CIMS Hospital was still the only hospital performing heart transplants in Gujarat and the numbers were steadily growing following the J curve. When the COVID-19 struck in 2020, yet the spirit of organ donation was high. Even in the midst of lock down, Gujarat did India's first deceased organ donation

during the pandemic where heart, liver and kidneys were retrieved. Deceased donation has doubled in Gujarat compared to 36 donations in 2020 to 70 donations in 2021 and number of organs donated increased from 110 to 223 organs in 2020 and 2021 respectively.

Civil Hospital in Ahmedabad which is one of the largest hospitals in Asia, hardly had any organ donations till 2020. Despite the fact that 80 to 90 patients are on ventilators in the neurosurgical ICU at any given moment, a large number of brain-dead potential organ donors are left unidentified. In 2020-21, the organ donation drive was initiated by the state government with the support from non-governmental organizations in the Civil Hospital as a result of which the deceased donation rate of the hospital increased significantly. The Civil Hospital, Ahmedabad marked its 100 deceased organ donations within a period of two years with 77 livers, 152 kidneys, 23 hearts and 18 lungs donated.

Despite the horrifying second wave of COVID-19, CIMS Hospital, Ahmedabad performed 14 heart transplants in 2021, nine of which were done in the last two months of the year. In fact, three heart transplants were performed in a span of six days in December 2021. The dream run of organ donation in Gujarat continued in 2022, with reaching a magical figure of 100 deceased organ donations in eight months' time and proclaiming Gujarat as the one of the states with highest deceased organ donations in the country. The Civil Hospital, Ahmedabad had set an example and bench mark for the rest of the government hospitals and medical colleges in India with its exemplary contribution to the deceased donation program.

The Gujarat model showcases a multi-pronged approach for successful deceased organ donation program, which includes:

- Government initiative, policies and impetus
- Dedicated and committed involvement from the medical community
- Relentless work and perseverance from the NGOs
- Media involvement for spreading and highlighting awareness about organ donation
- Government hospitals and medical colleges taking initiatives to increase organ donation

If these measures are taken into consideration, it will not take long to reach an organ donation rate of 10 per million population. With increasing organ donation, it is essential to have a fair and transparent organ sharing policy and this shall be achieved through bodies like National Organ and Tissue Transplant Organization (NOTTO). It is worth considering best practices followed across the world such as the UNOS model (United Network for Organ Sharing).

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