**ORGAN TRANSPLANTATION IN THE 21ST CENTURY**

**Dear brothers and sisters!! Warm greetings from Sri Balaji Vidyapeeth, popularly referred to as SBV. I am delighted to meet you all once again in the podcast series of our University SBV. I thank you all for your continuous support in this endeavour. Today, I shall share with you my thoughts on ORGAN TRANSPLANTATION IN THE 21ST CENTURY**

**Introduction:** Organ transplantation has undergone a sea of changes and presently emerged as one of the most effective and definitive treatment options for patients with end-organ dysfunction. We need to appreciate the fact that organ transplant had a humble beginning way back in the 20th century where it was perceived primarily as an experimental approach. Now, solid organ transplantation has transformed the survival rate and enhanced the quality of life of patients with end-organ dysfunction.

**Advancements in Organ Transplant, What we need to know:** The field of Organ Transplantation has evolved rapidly over the past few decades with incorporation of a variety of solid organs, namely liver, kidney, pancreas, heart, and lung as well. In addition, unconventional transplantation of other tissues such as from the upper extremity, uterus, larynx, skin and face into the donor pool has evolved. New and elegant advancements in surgical techniques such as laparoscopic / robotic organ retrieval have paved the way for more efficient and refined multi-organ procurements with minimal complications and decreased ischemic injury events. Immunosuppression therapy has also envisaged advancements with the expansion of immunosuppressive protocols to attenuate the host immune response and improve short and long-term graft survival. The evolution of Organ Transplantation is marked by technical advancement, development of newer immunosuppressive medications and protocols, innovation in broadening the donor pool, and the standardization of effective and ethical practices related to transplantation.

**The concept of Brain death:** The universal acceptance of the concept of “brain death” marked another advancement in the field of transplant. Brain death is considered to be an irreversible cessation of brain function and indicates that the patient is clinically and legally deceased. The availability of donors following brain death has led to a greater number and wider variety of organs available for Organ Transplantation beyond the limits of a single hospital system. This led to the formation of the Organ allocation agencies to oversee the sharing of organs.

However, the field of Organ Transplantation confronts new barriers, most importantly the expanding demand for Organ Transplantation that is outpacing the current supply. The greatest hope for overcoming these barriers comes from promising research on expanding the pool of organ candidates, whether through human graft or xenograft, and immunological modifications for improved graft-survival. Allocation protocols have been developed in an attempt to address these issues. Other avenues for Organ Transplantation are also being explored to increase the donor pool, including matched pair donation, ABO incompatible transplantation, split-liver donor transplants, islet cell implantation for pancreas transplants, and xenotransplantation.

**Organ Transplant and future path:** Future directions of transplant research would centre around the focus on attempting to minimize the immune response by facilitating a more targeted inhibition of the immune system thereby mitigating the adverse effects. The ideal situation in organ transplant is operational tolerance which is defined as a recipient having immunologic tolerance to the foreign organ in the absence of immunosuppressive drugs.

Xenotransplantation, or the transplantation of animal organs into a human recipient, is a growing area of research and has seen some promise in recent years. Recent advances in gene editing have considerably decreased the concern of incompatible cross-matching between animal and human components.

Transplant research has remained a source of constant innovation and has helped to improve outcomes for patients over time. The future of Organ Transplantation is bright with exciting new research being explored to overcome current obstacles.

**SBV TRANSPLANT SERVICES**

SBV has been at the forefront in providing organ transplant services to the needy patients in the Union Territory of Pondicherry. SBV has obtained regulatory approval for the kidney and Liver transplantation since 2019 and 2021 respectively. We are in the process of acquiring regulatory approval for lung and heart transplantation. It is worth mentioning that state- of-the- art Operation Theater, surgical equipments, Liver and Renal Transplant ICU with modern equipments strengthen our endeavours. We have a team of highly qualified Urologists, Nephrologists, surgical gastroenterologists, anaesthetists, well trained ICU nurses and support team. Till date, fifteen live related renal transplants and two deceased donor transplantation have successfully been accomplished. We have also completed a good number of deceased donor organ retrieval and shared organs with other hospitals under the guidance of the Regional Organ and Tissue Transplant Organisation based in Chennai. However, providing and extending transplant facilities to the marginalized and underprivileged sections would continue to receive top priority at Sri Balaji Vidyapeeth, popularly referred to as SBV.

**Closing remarks**: Well. My dear avid listeners of the **exclusive episodes** coming from the **desk of the Vice Chancellor**, Sri Balaji Vidyapeeth!!!!!Hope you enjoyed listening to all the 33 previous episodes much as I did enjoy bringing them to you. On a personal note, I would like to share that it was a gratifying experience for me to meet you through this podcast series. The series paved the way for me to explore on variegated topics of contemporary interest. Do continue to patronise our podcasts. From the next month onwards you would have the pleasure of listening to Prof. Nihar Ranjan Biswas who would be assuming the Office of the Vice Chancellor. Sri Balaji Vidyapeeth.

God bless!!