



Singapore
General Hospital
SingHealth



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MEDIA RELEASE

FIRST SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANT IN SINGAPORE

The first simultaneous pancreas and kidney (SPK) transplant in Singapore was successfully carried out last month by a team of surgeons from the National University Hospital (NUH) and Singapore General Hospital (SGH).

2 The transplant was supported by the Health Services Development Programme (HSDP) under the Ministry of Health (MOH). The programme promotes innovation and the adoption of advanced medical technology and protocols in public healthcare.

3 The successful transplant was performed at NUH. The patient, a 29-year-old Singaporean male, suffered from Type 1 diabetes and renal failure. He had been on insulin for over 15 years and on dialysis for more than a year. He has been registered on the waiting lists for both pancreas and kidney transplants since August 2011.

4 The five-and-a-half hour surgery was led by Associate Professor Krishnakumar Madhavan, Director of NUH's Adult Liver and Pancreas Transplantation Programme, and performed together with Dr Victor Lee, Director, Pancreas Transplant and Consultant, Department of General Surgery, SGH; and Dr Tiong Ho Yee, Director, Kidney Surgery and Transplantation, NUH.

5 A pancreas transplant provides a potential cure for diabetes, particularly Type 1. It can improve the quality of life and reduce long-term diabetic complications such as kidney failure, blindness and stroke.

6 The patient is recovering well and will continue to receive follow-up care at the NUH.

7 Please refer to Annexes A and B for more information.

**MINISTRY OF HEALTH
NATIONAL UNIVERSITY HOSPITAL
SINGAPORE GENERAL HOSPITAL**

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ANNEX A – Additional information on SPK transplant

The main objectives of pancreas transplant are to help Type 1 diabetics to be insulin free, improve quality of life and reduce long-term diabetic complications. It has been shown to prolong survival in patients with Type 1 diabetes and renal failure.

There are three types of pancreas transplant:

- i. *Simultaneous pancreas-kidney transplant (SPK)* – For Type 1 diabetics who have end-stage renal disease requiring dialysis. Such patients may already be awaiting a kidney transplant in Singapore, and this is when pancreas transplant can be combined together with the kidney transplant in one surgery.
- ii. *Pancreas after kidney (PAK) transplant* – Type 1 diabetics who had a successful kidney transplant, and intend to be insulin-free thereby avoiding long-term diabetic complications
- iii. *Pancreas transplant alone (PTA)* – Those with significant diabetic complications or have life-threatening complications such as frequent and severe episodes of hypoglycemia (abnormally low level of glucose in the blood) or have hypoglycemic unawareness.

The main rationale for simultaneous pancreas kidney transplant is the survival benefit from the surgery. Without transplant, the 5-year survival for such patients in Singapore is 38 per cent. With successful dual pancreas kidney transplant, the expected 5-year survival is more than 90 per cent.

For Type 1 diabetic patients with kidney failure, simultaneous pancreas kidney transplant requires only one surgery to cure diabetes and kidney failure. In addition, having both pancreas and kidney from the same donor will minimise the risk of rejection as both organs are of the same tissue type.

Potential recipients should have confirmed Type 1 diabetes and be on insulin with life-threatening or significant diabetic complications. They should not be above 55-year-old at the time of referral, as the risk of surgery is higher for older patients. For simultaneous pancreas kidney transplant recipients, they should also qualify for kidney transplant on their own merit, that is, be on dialysis and be eligible to be put on the national waitlist for kidney transplant.

At the time of initial assessment, the pancreas transplant surgeon, renal physician, diabetes physician, anaesthetist and transplant coordinator will be required to assess the patient. Patients will have the opportunity for detailed discussion regarding pancreas transplantation and will be counselled on the risks and benefits of deceased and living donor kidney transplantation alone versus simultaneous pancreas-kidney transplantation.

Following initial outpatient assessment, patients who are considered potentially suitable candidates and who remain willing for transplant will undergo further investigations. Transplant coordinators will arrange all required investigations prior to placing the patient on the wait list for transplant. The transplant team will then review the results.

The decision about listing the patient for simultaneous pancreas/kidney transplantation will be made by the transplant surgeons after discussion with the multi-disciplinary team and the patient.

The pancreas transplant service is currently piloted in NUH with the collaborative surgical and medical pancreas transplant team from SGH and NUH. Following successful pancreas transplant, long-term follow up of these patients can be with their original physician usually at NUH or SGH.

Pancreas transplants have been carried out in America, Europe and Asian countries such as Japan and Korea. Based on the Global Observatory on Donation and Transplantation database, a total of 2,377 pancreas transplants were carried out in America, Europe, Western Pacific etc in 2010, of which, around 60% of these pancreas transplants were carried out in America.

ANNEX B – Additional information on the Health Services Development Programme

In 2000, MOH established the Health Services Development Programme (HSDP) as a funding platform for new clinical services to be piloted and introduced in Singapore. The objective of the HSDP is to enable the development of new health services and medical capabilities through the funding of three categories of projects on a pilot basis: (i) new cutting-edge medical technology, which requires a period of evaluation; (ii) advanced and costly treatments, which are well-established but costly and would be offered on a subsidised basis to patients who would have a good likelihood of benefitting from the treatment; and (iii) major augmentations of existing management capability for key diseases. Approximately \$15m is set aside each year to fund new and existing proposals to support the development of new clinical services in Singapore.

The HSDP has helped to augment Singapore's medical capabilities in our public healthcare system. For example, two pilot parallel programs "Newborn Hearing Screening & Intervention Programme" and "National Cochlear Implant Programme" were funded under HSDP in 2001 to improve the early detection of hearing impairment in babies in Singapore as late diagnosis of congenital hearing impairment can result in significant delays in speech and language development, and to subsidise the costs of cochlear implants for those with profound hearing impairment. Today, a screening rate of over 99% has been achieved in the restructured hospitals. Newborns who have not undergone hearing screening at birth are screened at the polyclinics during their post-natal check-ups.

KEY TEAM MEMBERS

National University Hospital

| University Surgical Cluster | |
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| Associate Professor Krishnakumar Madhavan | Head & Senior Consultant Div of Hepatobiliary & Pancreatic Surgery Director Adult Liver and Pancreas Transplantation Programme Co-Director, National University Centre for Organ Transplantation |
| Dr Tiong Ho Yee | Director, Kidney Surgery & Transplantation Consultant Department of Urology |
| Dr Shridhar Iyer Ganpathi | Senior Consultant Div of Hepatobiliary & Pancreatic Surgery |
| Dr Alfred Kow | Consultant Div of Hepatobiliary & Pancreatic Surgery |

| University Medicine Cluster | |
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| Professor A. Vathsala | Head Division of Nephrology Director Adult Renal Transplantation Programme Co-Director, National University Centre for Organ Transplantation |
| Dr Angeline Goh | Consultant Division of Nephrology |
| Dr Wong Weng Kin | Registrar Division of Nephrology |
| Dr Yeo See Cheng | Registrar Division of Nephrology |
| Professor Thai Ah Chuan | Senior Consultant Division of Endocrinology |
| Dr Eric Khoo | Consultant Division of Endocrinology |

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| Department of Anaesthesia | |
| Dr Suresh Paranjothy | Consultant |
| Dr Tan Yanni | Medical Officer |

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| National University Centre for Organ Transplantation | |
| Ms Manjit Kaur | Assistant Director, Clinical Transplantation |
| Ms Goh Chee Ling | Senior Transplant Coordinator |

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| Nursing | |
| Ms Loh Lee Leng | Senior Staff Nurse (Operating Theatre) |
| Ms Karen Sun | Nurse Clinician (Ward 43) |
| Ward 27 (Intensive Care Unit) | |
| Ward 43 (General Ward) | |

Singapore General Hospital/Singhealth

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| Dr Victor Lee | Consultant Department of General Surgery Director, Pancreas Transplant SingHealth Transplant |
| Dr Brian Goh | Consultant Department of General Surgery |
| Mr Bay Qin Yao | Transplant Coordinator Singhealth Transplant |