



**Service Priorities and Programmes**  
**Electronic Presentations**

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**Enhancing the Clinical Management of Kidney Transplant Patients with Unknown Donor HLA Typing by a Modified Urine HLA-Typing Technology**

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**Introduction**

Kidney transplantation is the most preferred treatment of end stage kidney diseases. However there is a severe shortage of deceased kidney donors in Hong Kong, so that fewer than 100 patients are transplanted annually and with an average waiting time of 68 months. A significant number of patients have kidney transplantation performed outside Hong Kong, and donor information is often lacking which hinders the investigation for donor-specific antibody (DSA) and the diagnosis and management of antibody-mediated graft injury.

**Objectives**

To elucidate donor HLA types using a non-invasive method in kidney transplant patients with unknown donor typing to facilitate timely DSA identification.

**Methodology**

Urine specimens were obtained from 616 kidney transplant recipients under Hospital Authority who had single transplantation performed outside Hong Kong from 2008 to 2017. Genotyping was performed on DNA purified from the patients urine to determine the HLA types which represent a combination of both recipient and donor HLA phenotypes. Mismatched donor HLA typing were then deduced from the urine result and the patient's HLA data (1-2), and used in the detection of DSA in routine serum antibody monitoring.

**Result**

The results showed that this simple non-invasive method was useful to determine unknown donor HLA typing and facilitated the detection of DSA. This improved the clinical management of patients who received transplantation outside Hong Kong. The

DSA detection rate achieved was 50%, comparable to patient with known donor HLA typing. We believe the improved clinical management could eventually improve the graft survival rate through early detection of antibody-mediated renal allograft injury.

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