

## **Kidney I - Longevity of Transplant Kidney**

### **Immune and non-immune mediated allograft injury ~the best way of accurate interpretation of kidney allograft~**

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It is important to prevent immune and non-immune mediated allograft injury as much as possible for the long-term survival of the transplanted kidney. In particular, it is required to detect and treat such damage to the kidney allograft within one year after transplantation before clinical symptoms appear.

Although novel biomarkers have been developed to detect immunological and non-immunological damage, kidney allograft biopsy is still the best way to accurately assess the condition of transplanted kidney. To identify subclinical rejection, histological change, drug nephrotoxicity, viral, infection and recurrence of glomerulonephritis, a protocol biopsy is carried out routinely within three months and one year after transplantation.

There are some points to be noted when performing accurate and safe kidney allograft biopsy as follows.

1: To obtain a sufficient biopsy sample:

The 16G (not 18G) core-biopsy needle is preferably used under ultrasound guidance to collect at least two specimens. 5% of both ends of the width of the pathological sample cannot be used for diagnosis due to crushing at the time of biopsy. In addition, since the number of viable glomeruli is small in patients with chronically deteriorating renal function or in patients who have undergone kidney transplantation for more than 10 years, it is recommended to collect specimens.

2: To make an accurate histopathological diagnosis:

It is recommended to perform staining of PAS, PAM and masson trichrome, immunofluorescence, and electron microscopy. All these pathological methods are necessary to distinguish subclinical rejection, histological change, drug nephrotoxicity, viral, infection and recurrence of glomerulonephritis.

3: To avoid any complications associated with kidney allograft renal biopsy:

Day-trip tests should be avoided for early detection and early treatment of complications due to the biopsy. These biopsy procedures require hospitalization for 2 days and 1 night.