ANURIC PATIENTS BEFORE RENAL TRANSPLANTATION HAVE TROUBLE WITH LOWER URINARY TRACT SYMPTOMS POSTOPERATIVELY

Hypothesis / aims of study
In our country, renal transplantation is not common compared with hemodialysis (HD) because of the donor shortage. Therefore, we often treat renal transplanted patients after long-term HD. One of many complications related to long-term HD is disuse atrophy of the bladder. The storage and voiding symptoms after transplantation may be caused by a small bladder capacity and bladder smooth muscle atrophy. The present study tried to determine whether the incidence of lower urinary tract symptoms (LUTS) and decreased quality of life (QOL) after transplantation influence by urine production before transplantation. Thus, we investigated LUTS, QOL and objective findings related to lower urinary tract function postoperatively in both anuric and non-anuric patients before transplantation.

Study design, materials and methods
Data were prospectively collected from patients who underwent renal transplantation at our hospital between 1999 and 2010. Patients were divided into anuric group and non-anuric group by the urine production before transplantation. In regard to the incidence and severity of LUTS, and impact on QOL, we used International Prostate Symptoms Score (IPSS), Overactive Bladder Symptoms Score (OABSS) and King’s Health Questionnaire (KHQ). Lower urinary tract function was examined by uroflowmetry, post-void residual urine volume and 24-hour frequency volume chart. More than a year after transplantation, patients were evaluated by these questionnaires and objective findings.

Results
Twenty eight patients were included in this study (Table 1). Voided volume, maximum flow rate, post-void residual urine volume and 24-hour frequency were not significantly different between anuric and non-anuric groups (Table 1). Voiding, storage and total symptom score and QOL score of IPSS were significantly higher in anuric group compared to non-anuric group (Table 2). Urgency score of OABSS was also significantly high in anuric group (Table 2). According to the KHQ, anuric patients suffered from physical limitations and personal relationship due to LUTS after transplantation (Table 2).

Interpretation of results
More than a year after transplantation, bladder function except for 24-hour frequency was normal in anuric patients as well as non-anuric patients. Increased frequency is thought to be caused by polyuria. Our findings indicate that disuse bladder due to long-term HD usually recover. On the other hand, LUTS continued and QOL became impaired in anuric patients for over a year. One possible explanation is that the duration of HD is long in anuric patients. Pathophysiology related to long-term HD such as malnutrition, inflammation and atherosclerosis increases oxidative stress. Increased oxidative stress damages nerve, epithelium and smooth muscle of the bladder, thereby producing storage and voiding symptoms.

Concluding message
Anuric patients before transplantation complain of LUTS for more than a year postoperatively. We should pay attention in this state and study treatment strategy.
References

Disclosures
Funding: none Clinical Trial: No Subjects: HUMAN Ethics not Req'd: we used questionnaire and non-invasive testing with the consent of the patient. Helsinki: Yes Informed Consent: Yes