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NOCTURNAL POLYURIA INDEX OF THE RENAL TRANSPLANT RECIPIENTS DEPENDS ON THE AGE OF TRANSPLANTED KIDNEY GRAFT

Hypothesis / aims of study

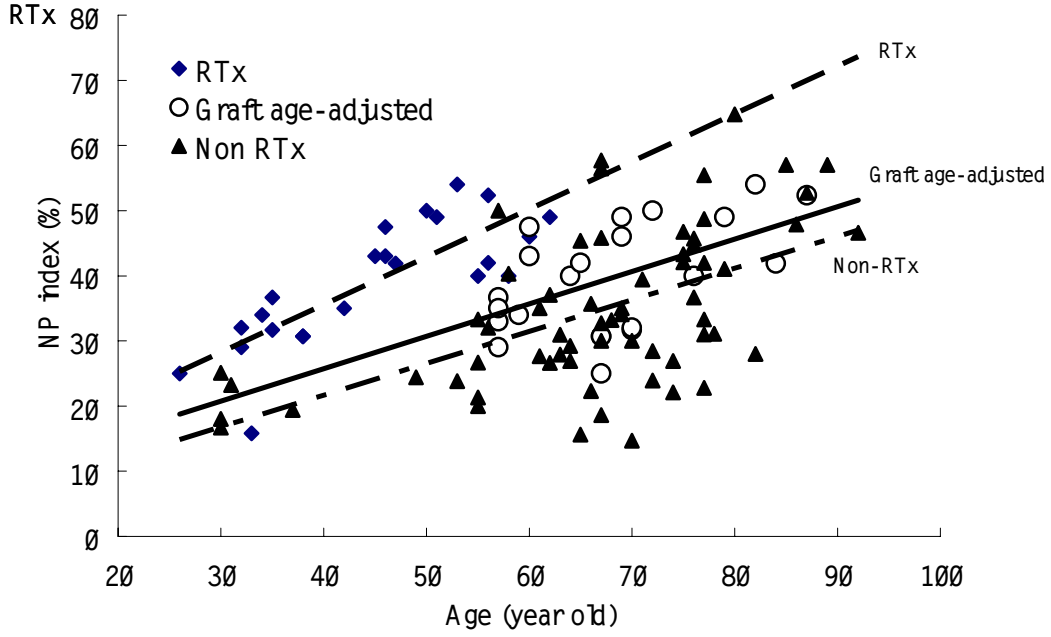
Nocturnal polyuria is associated with complex mechanism. As a factor of nocturnal polyuria, aging is thought to be important. Renal transplant recipients are laid in atypical condition, in that, most of the age of their transplanted kidney graft (same as the age of donor) are not same as their own ages. This condition can be used in investigating the effect of kidney age in various studies. The present study was conducted to examine the effects of kidney age itself on nocturnal urine production.

Study design, materials and methods

In 24 renal transplant recipients (RTx group) and 64 non-recipients (non-RTx group) subjects, frequency-volume charts (FVC) were recorded at least over 48 hours. octurnal polyuria index (NP index) was calculated from the FVC. These data were analyzed with age and compared between these two groups. In addition, hypothetical distribution of NP index with the age of their transplanted graft ,which was obtained by substitution each age of kidney graft for corresponding recipient's age (graft age-adjusted group), were also compared with those from RTx group and non-RTx group.

Results

Mean age were 45.1 years and 66.3 years in RTx group and non-RTx group, respectively. Mean NP index were 35.6% and 34.2% in RTx group and non-RTx group, respectively. Nocturnal urinary frequency (NUF) and maximum voided volume (MVV) were not different between RTx and non-RTx groups. Although mean serum creatinine (Cr) was higher and creatinine clearance (Ccr) was lower in RTx group than those in non-RTx group, Cr (less than 2.2 mg/dl) and Ccr (more than 55 ml / min) were not influenced on NP index, NUF and MVV in both groups enrolled in this study. Mean age of graft age-adjusted group were 64.8 years, which did not different from that of non-RTx group. As can be seen from the Figure, NP index increased with age in each group. Distribution of NP index in graft age-adjusted group was similar with that in non-RTx group.



Interpretation of results

NP index in RTx was higher considering their age. NP index in graft age-adjusted group was similar with that in non-RTx group as a control, suggesting that NP index in RTx group was essentially dependent on, not recipient's own age, but the age of transplanted kidney graft.

Concluding message

It is concluded that aging of kidney may be important factor in respect of nocturnal polyuria.