

# The impact of exercise habits on clinical infection outcomes after kidney transplantation.

Hiroki Kurata <sup>1</sup>, Yasushi Mochizuki <sup>2</sup>, Ken Kawada<sup>1</sup>, Yuta Mukae<sup>1</sup>, Yuichiro Nakamura<sup>1</sup>,  
Kensuke Mitsunari <sup>1</sup>, Tomohiro Matsuo<sup>1</sup>, Kojiro Ohba<sup>1</sup>, Tomoya Nishino<sup>2</sup>, Ryoichi Imamura<sup>1</sup>

<sup>1</sup>Department of Urology and Renal Transplantation, Nagasaki University Hospital, Nagasaki, Japan

<sup>2</sup>Division of Blood Purification, Nagasaki University Hospital, Nagasaki, Japan

**COI**

*Hiroki Kurata*

I have no potential conflict of interest to report.

# 【Purpose】

- Management of cardiovascular diseases, infection diseases and malignant diseases are important to maintain clinical outcomes after kidney transplantation.
- Recently, it has been reported that nutritional management and rehabilitation are useful to improve and maintain them.
- We examined exercises habits of kidney transplantation patients in our institute.

# 【Materials and Methods】

- A retrospective observational study was conducted on 31 patients, who had been followed up after living donor kidney transplantation.
- We examined exercise habits for 31 patients using survey sheet.
- Exercise habits were defined as aerobic exercise 3-5 days per week for a total of 20-60 minutes per day, based on the guideline for renal rehabilitation formulated by The Japanese Society for Renal Rehabilitation.
- Statistical analysis was performed using the following technique. Differences between both groups were compared using unpaired t test and Fisher's exact test for categorical variables and were considered statistically significant at  $p < 0.05$ .

# 【Backgrounds】

	w/ exercise habits	w/o exercise habits	P-value
n	16	15	
sex (M/F)	11/5	10/5	0.90
Age at transplantation	40.8 ± 14.1	43.4 ± 19.8	0.68
Dialysis periods before transplantation (months)	30.9 ± 36.6	17.5 ± 30.8	0.30
ABO compatible/incompatible	12/4	7/8	0.11
Donor age	55.1 ± 8.9	57.1 ± 11.6	0.58
Observational periods after transplantation (years)	13.8 ± 10.1	8.0 ± 5.0	0.06

# 【Results】

	w/ exercise habits (n=16)	w/o exercise habits (n=15)	P-value
Patient survival rate	100%	100%	
Graft survival rate	100%	100%	
Cardiovascular diseases	13%	20%	0.57
<b>Bacterial Infection</b>	<b>13%</b>	<b>53%</b>	<b>0.02</b>
CMV infection	19%	27%	0.59
acute / chronic rejection	25%	13%	0.41

There were significantly fewer cases of bacterial infection in patients with exercise habits.

# 【Conclusion】

- Infection is a frequent complication after kidney transplantation.
- There were significantly differences in bacterial infection between the patients with exercise habits and without exercise habits.
- It is that renal rehabilitation suppress the onset of sarcopenia and frailty which worsen patients outcomes. Therefore, We recommend an aerobic exercise habits for suppressing bacterial infection after kidney transplantation.