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Post-transplant obesity in non-obese kidney transplant recipients

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Introduction: Obesity is one of the major public health problems worldwide. Similar to non-transplant population, obesity remains an important co-morbidities affecting both medical and surgical outcomes after kidney transplantation. Progression from non-obese to become obese after kidney transplantation in different pre-transplant body mass index (BMI) strata is unknown.

Objective & Hypothesis: This study aims to determine the pattern of weight gain in pre-transplant non-obese patients and compare the risk of development of obesity in these population.

Materials & Methods: This is a retrospective cohort study of 70 kidney transplant recipients, whom were divided by BMI at the time of kidney transplantation into normal weight, overweight, and obesity (BMI <25, ≥25 to <30, and ≥30 kg/m², respectively). Incidence rate of obesity in normal weight and overweight groups were determined since the time of transplant discharge and then every 3 months until 96 weeks post-transplantation. Relative risk was used to measure the association between different pre-transplant BMI strata (normal weight or overweight) and the development of obesity. In addition, point prevalence of obesity from 6 years pre-transplant to 96 weeks post-transplantation were reviewed.

Results: Of all 70 patients, 41 (58.6%) were male and mean age was 52.7±1.4 years (mean±SEM). Mean BMI of 3 groups at the time of kidney transplantation were 21.48, 27.18, and 34.08 kg/m² (p<0.001). By following up BMI annually from 6 years pre-transplantation, point prevalence of normal weight and overweight trended up and of obesity trended down; whereas, point prevalence of normal weight appeared trending down and of overweight and obesity trended up after kidney transplantation with a follow-up every 3 months up to 96 weeks post-transplantation. During post-transplant period, incidence rate of obesity among pre-transplant non-obese patients were higher in overweight than normal weight groups, the incidence rate ratio was greatest up to 4.88 at the 60-week post-transplant period. However, there was no statistically significant difference. Similar to IRR, overweight groups was at greater increased risk of development of obesity after kidney transplantation compared to normal weight groups with no statistically significant difference.

Conclusions: Prevalence of obesity in kidney failure patients who were on the kidney transplant waiting list appear to decrease until the time of kidney transplantation, but becomes increase after successful kidney transplantation. This may reflect possible motivation in losing weight to become eligible for kidney transplantation in obese patients and several contributing factors of weight gain after kidney transplantation. Moreover, overweight at the time of kidney transplantation increased risk to develop post-transplant obesity compared to normal weight patients. Weight loss and weight maintenance should be a continuing process from pre- through post-kidney transplant periods in all kidney transplant recipients particularly pre-transplant overweight patients.

Biography

Ekamol Tantisattamo has completed his MD from the Faculty of Medicine, Siriraj Hospital, Mahidol University in Bangkok, Thailand and pursued his specialty training in internal medicine at the University of Hawaii John A Burns School of Medicine. He then completed sub-specialty training in Nephrology at Emory University School of Medicine. Since his special interest is in clinical transplantation, he went to transplant nephrology fellowship training at Northwestern University Feinberg School of Medicine. He is currently a staff Physician at Multi-Organ Transplant Center, Division of Nephrology, Department of Internal Medicine, William Beaumont Hospital in Royal Oak, Michigan and Assistant Professor of Medicine at the Oakland University William Beaumont School of Medicine in Rochester, Michigan. He is interested in clinical research in the areas of Nephrology and Transplantation including clinical hypertension, clinical pancreas-kidney transplantation, transplant renal artery stenosis, Chronic Kidney Disease-Mineral Bone Disorder (CKD-MBD) and nutrition-related post-kidney transplantation, and vascular calcification.

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