

## Abstract Submission No.: A-0985

### Nutrition Support Impact on Kidney Function in Renal Transplant Recipients: A Transition Phase Analysis

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**Objectives :** This study evaluated the nutrition support provided to kidney transplant recipients (KTRs) during the initial three months post-transplantation and to identify risk factors of impaired kidney function (IKF) up to year one post-transplant.

**Methods :** We designed a prospective, single centre including 121 KTRs who underwent transplant procedures at a hospital in Vietnam from 2017 to 2023. Patients with delayed kidney function and acute rejection were excluded. The evaluations included anthropometrics and laboratory tests. During the first three months, the daily dietary intake of energy (30-35 kcal/kg) and protein (1.3-2.0 g/kg) followed the guideline recommendations for short-term post-transplantation.

**Results :** Our findings indicate that despite adherence to guideline recommendations for energy and protein intake, patients experienced significant fluctuations in body weight, with a notable decrease from before transplantation to 7<sup>th</sup>-Day 7 and 28<sup>th</sup>-Day, followed by a gradual improvement over subsequent months (Figure 1). However, a substantial proportion of KTRs transitioned from healthy weight before transplantation to underweight, overweight/obese categories by the three-month follow-up period and continued to T12 (Figure 2). In 3 months of follow-up with nutrition support, 43.9% of patients developed hypertension, 64.3% hyperlipidaemia, and 47.1% hyperglycemia. Hypertension and hyperglycemia at T3 were independent risk factors for IKF with HR 1.85 (1.50-2.29) and 1.80 (1.43-2.26), respectively. Additionally, we found moderate and severe malnourishment at T3 increased the risk of IKF at T12 to 2.2 (95%CI, 1.62-2.96) and 3.2 (95%CI 1.94-5.43) times. KTRs with hypophosphatasia (HR 0.19, 95%CI 0.12-0.29) and hypomagnesemia (HR 0.23, 95%CI 0.13-0.41) have a significantly lower risk of impaired kidney function.

**Conclusions :** Our study highlights the complex interplay between nutrition, metabolic parameters, and kidney function and the importance of nutrition support in optimizing outcomes in the KTRs. Further research is warranted to explore dietary strategies and interventions to mitigate the risk of malnutrition and improve long-term grafts following kidney transplantation.

DaoTH. Figure 1.jpg

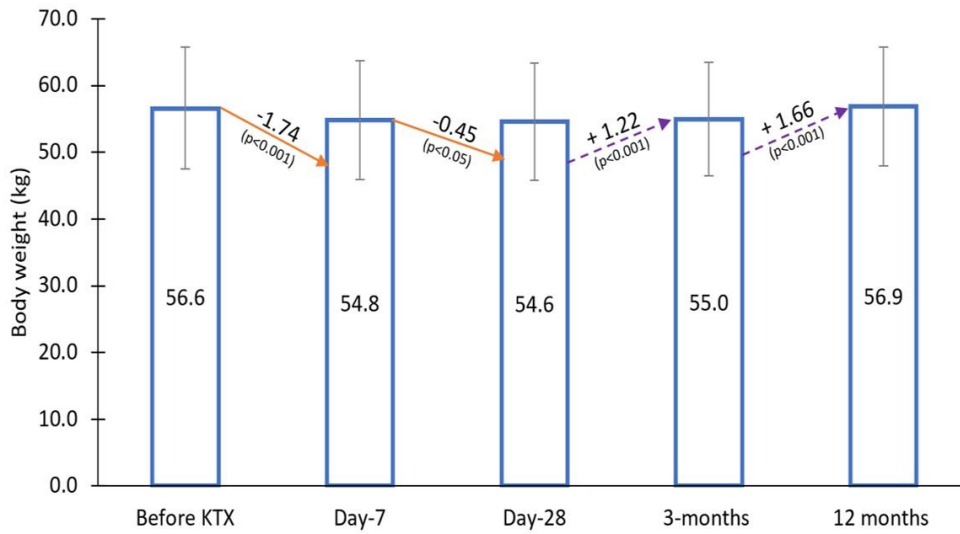


Figure 1 Dynamic Weight Changes in Kidney Transplant Recipients: Pre-Transplantation to First Year Post-Transplantation

DaoTH. Figure 1.jpg

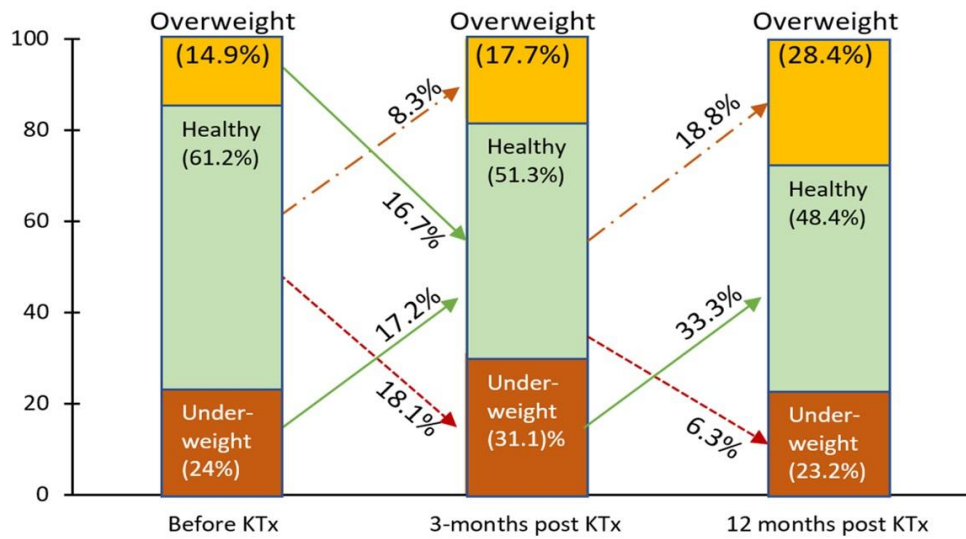


Figure 2 Nutritional Status Evolution in Kidney Transplant Recipients from Baseline to 12-Month Follow-up.