Supplementary Table 1: Baseline demographic characteristics of participants (n = 52).

Characteristics	Value
Mean age (range), years	40.81 ± 14.74 (8-64)
Age group, n(%)	
<20 years	4 (7.69)
20-40 years	21 (40.38)
40-60 years	25 (48.07)
>60 years	2 (3.84)
Gender, n (%)	
Male	38 (73.1)
Female	14 (26.9)
Native kidney disease, n (%)	
Chronic glomerulonephritis	28 (53.8)
Diabetic nephropathy	8 (15.4)
Chronic interstitial nephritis	7 (13.5)
Chronic pyelonephritis	3 (5.8)
Hypertensive nephrosclerosis	4 (7.7)
Other aetiology	2 (3.8)
Mean duration of disease (range), months	59.68 ± 55.33 (2-240)
Mean duration of dialysis prior to transplantation (range), months	20.587 ± 21.27 (0.5-108)
Pre-transplantation hyperparathyroidism	
Mean iPTH levels prior to transplantation(range), pg/ml	370.496 ± 419.26 (2.5-2267)
iPTH levels, n(%)	
<65pg/ml	8 (15.38)
>65pg/ml	44 (84.61)

Supplementary Materials and Methods

Study setting and study design

This is a prospective, observational study conducted at the tertiary health care center during the period of June 2016 to May 2017. All the patients who had undergone renal transplantation were included. Patients with primary hyperparathyroidism and previous history of parathyroid surgery were excluded. The study protocol was approved by Institutional Ethical Committee (IEC) and the study was in accordance with the Declaration of Helsinki. All patients provided written informed consent.

Data collection and tools

Data regarding demographic characteristics, diagnosis, duration of disease, and dialysis vintage were noted. Serum iPTH (intact PTH) levels were measured at baseline (i.e., measured during last three months before transplantation or just before transplantation if did not perform in last three months), 3, 6, and 12-month post-transplantation. Biochemical parameters including serum creatinine, serum calcium (serum albumin corrected), serum phosphorus, serum albumin, and serum total vitamin D levels were estimated pre and post 3, 6 and 12-month of transplantation. eGFR was calculated according to the MDRD equation [eGFR = 32788 x SCr-1.154 x age-0.203 x [1.212 if black] x [0.742 if female] and Nankivell formula [6.7/s Cr (mmol/L)] + [weight (kg)/4] - [serum urea (mmol/L)/2] - $[100/\text{height (m)}^2]$ + (35 if males and 25 if females)].

Sample size calculation

The reported prevalence of post-transplantation hyperparathyroidism ranged from 7% to 96%. Herein, we considered 86% prevalence of parathyroid disorder at 12-month posttransplantation.[s11] The below-mentioned formula was used for sample size calculations.

$$n= Z^2\ p\ q/d^2$$

Where, Z = Standard normal variate value = 1.96 (95% Confidence interval)

  p = Prevalence of post-transplantation
     hyperparathyroidism= 0.86 q = 1- p = 0.14
  d = clinical allowable error = margin of error = 10%

The estimated sample size was found to be 46.

Statistical analysis

Data were analyzed using the SPSS software version 21.0 (SPSS Inc, Chicago, IL). Continuous variables are expressed as mean ± standard deviation and compared using an independent t-test. Categorical variables are represented as frequency and compared using chi- square test or Fisher's exact test based on the number of observations. Pearson-correlation coefficient (two-tailed) was computed to identify the association between normally distributed continuous variables. P-value <.05 was deemed statistically significant.

Definitions

Hyperparathyroidism: PTH >65 ng/ml; Hypercalcemia: Albumin corrected serum calcium >10.2 mg/dl; Hypocalcaemia: Albumin corrected serum calcium <8.6 mg/dl; Hyperphosphatemia: Serum phosphorus >4.5 mg/dl; Hypophosphatemia: Serum phosphorus <2.5 mg/dl. Graft dysfunction was identified based on serum creatinine level and eGFR calculations.

Supplementary References

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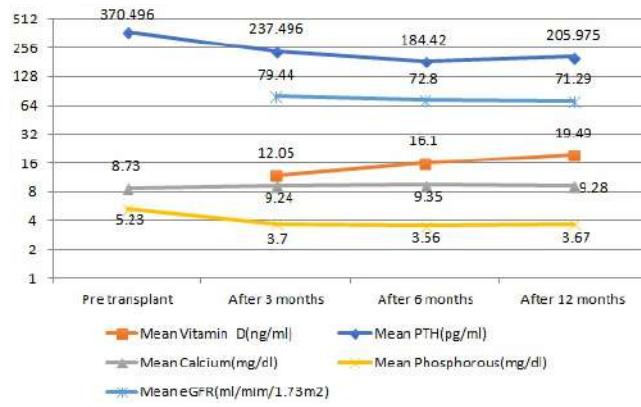
Supplementary Figure 1: Trend of change in eGFR, serum PTH, serum calcium, serum phosphorus, and serum vitamin D post-transplantation
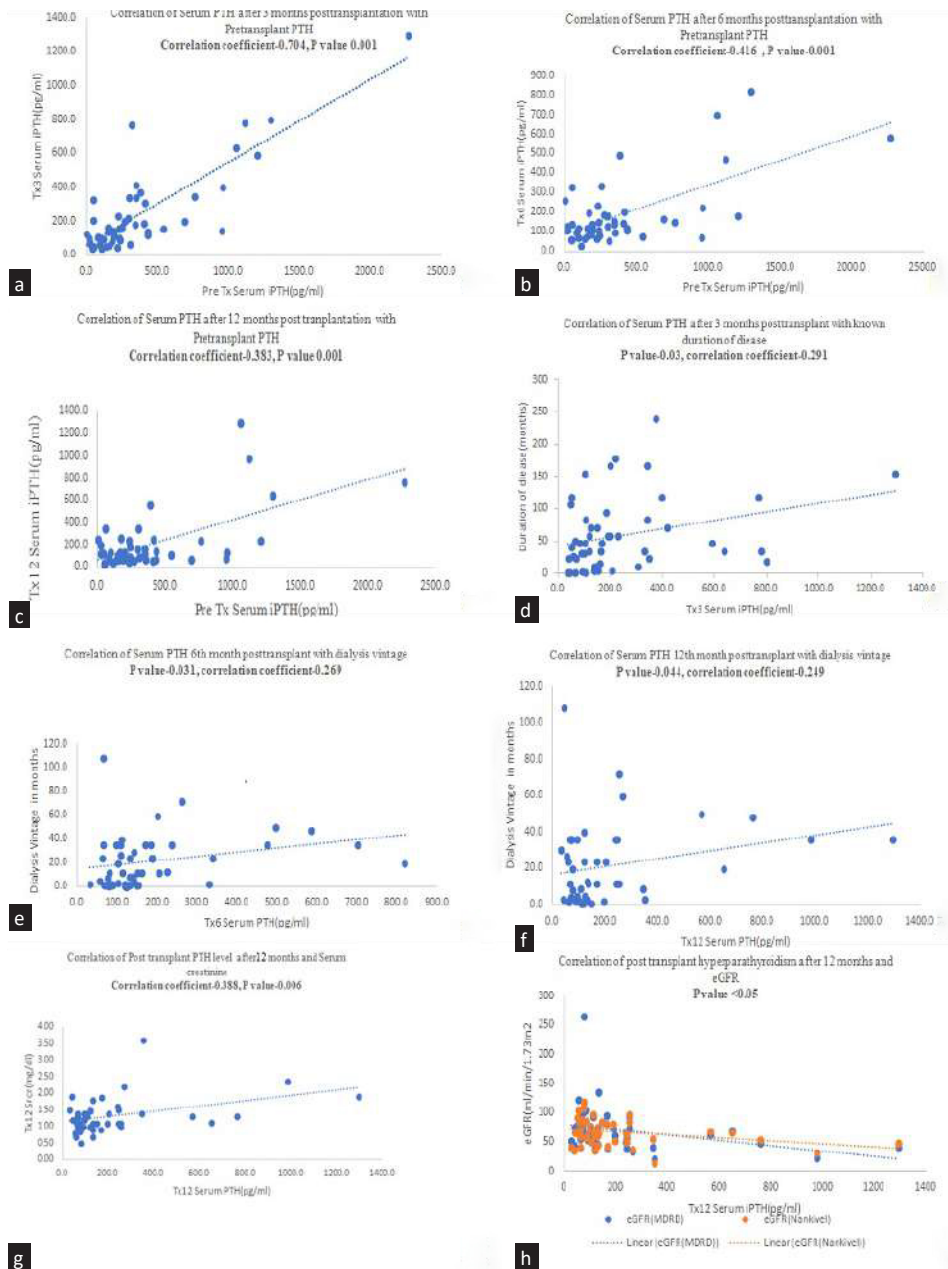
Supplementary Figure 2: (a) Correlation of 3-month post-transplantation hyperparathyroidism with pre- transplantation (b) Correlation of 6-month post-transplantation hyperparathyroidism with pre- transplantation (c) Correlation of 12-month post-transplantation hyperparathyroidism with pre-transplantation (d) Correlation of 3-month post-transplantation hyperparathyroidism with duration of disease (e) Correlation of 6-month post-transplantation hyperparathyroidism with dialysis vintage (f) Correlation of 12-month post-transplantation hyperparathyroidism with dialysis vintage (g) Correlation of 12-month post-transplantation hyperparathyroidism with serum creatinine (h) Correlation of 12-month post-transplantation hyperparathyroidism with eGFR