Post renal transplant hyperparathyroidism: Indian experience

Dwarak Sampathkumar, Krishnaswamy Sampathkumar, Andrew Rajiv, Shakthi Kumar, Senthil Kumar, Hitesh Desai, Harsha Hanumaiah

Department of Nephrology, Meenakshi Mission Hospital and Research Centre, Madurai, India

Background: Progressive chronic kidney disease (CKD) results in secondary hyperparathyroidism (SHPT). After a successful renal transplant, theoretically SHPT should rapidly regress. But residual parathyroid overactivity may persist. Indian reports of post-transplant hyperparathyroidism (PTHP) are sparse.

Methods: A cross sectional study was undertaken to identify the prevalence, clinical features, and risk factors for PTHP. One hundred twelve consecutive patients who underwent renal transplantation in our unit from 2014 to 2018 and completed 3 months of post-transplant period were included. We excluded patients with allograft dysfunction, active infections, and malignancy.

Results: The total number of patients was 112; mean age 38 ± 12 years; 88 males and 24 females; crescentic glomerulonephritis, diabetic nephropathy, and CKD of unknown etiology were 61%, 18%, and 16%, respectively. Transplant vintage was 48 ± 44 months. Mean estimated glomerular filtration rate (GFR) was 71 ± 28 mL/min/1.73 m². Sixty-two percent of them had raised intact parathyroid hormone (PTH) levels. Only two out of the 76 cases of PTHP patients had raised serum calcium above 10.5 mg/dL with a poor sensitivity of 2.63% and with 98% specificity. Serum phosphorus of less than 2.5 mg/dL was encountered in only 14 out of 76 cases of hyperparathyroidism with a low sensitivity of 18% and specificity of 88%. In the hyperparathyroid group there was a significant reduction of 25-OHD3 (serum 25-hydroxyvitamin D3) levels when compared to control group (30 ± 5 ng/mL vs. 23 ± 8 ng/mL; $P \leq 0.0001$). ANOVA showed a significant association between PTH levels and female sex, estimated GFR levels, hemoglobin, calcium, and 25-OHD3 levels. PTH concentrations were significantly negatively correlated with serum calcium ($r = -0.39$, $P = 0.0003$) and vitamin D levels ($r = -0.50$, $P = 0.002$).

Conclusions: Hyperparathyroidism is common in post renal transplant setting. Serum calcium and phosphorus levels fared poorly as screening tests. Vitamin D deficiency should be addressed in post-renal transplant setting to prevent this condition.

Corresponding author: Dwarak Sampathkumar

E-mail: dwarak.acf@gmail.com

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