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Primary Hyperparathyroidism and RAAS Activation : Evidence for an Emerging Endocrine Axis

Once considered independent endocrine systems, recent evidence suggests a complex bidirectional interaction between the hormones that regulate phosphocalcic metabolism, especially parathormone (PTH), and the renine-angiotensine-aldosterone system (RAAS). Accumulated evidence suggests this interaction between PTH and aldosterone as an underlying mechanism for the increased risk of cardiovascular damage observed in primary hyperparathyroidism (PHPT). Therefore, it is highly probable that the increase in cardiovascular mortality in patients with PHPT is related to RAAS dysfunction.

Methodology

We studied this relationship in 71 patients with PHPT (9 men and 62 women) before and three months after parathyroidectomy (PTX) was performed in 37 of them.

Results

10% of our patients had hypokalemia at the time of diagnosis of PHPT, 42% had a biological profile favorable to primary hyperaldosteronism and 14% a biological profile compatible with secondary hyperaldosteronism. No statistically significant correlation was found between RAAS biomarkers and phosphocalcic biochemical parameters. Nevertheless, the distribution of our sample into two groups of hypertensive and non-hypertensive patients showed a significant correlation only in the group of non-hypertensive patients.

Although the data regarding the effect of PTX on RAAS are contradictory. Three months after PTX, we observed a significant increase in serum potassium and a significant decrease in aldosterone levels and aldosterone-renin ratio (ARR).

Conclusion

The potential impact of the recent mutual interaction between PTH and aldosterone on target organ injury qualifies this relationship as a worrying friendship for cardiovascular and metabolic health in patients with PHPT.

Keywords: PHPT, RAAS, Cardiovascular, Parathyroidectomy.



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Biography

Dr. Abdelkader Yahia is an Endocrinologist at the Mother and Child Hospital of Aemy, Algiers, Algeria, and a faculty member at the University of Health Sciences, Algiers.

His clinical and academic work focuses on a broad spectrum of endocrine disorders, with particular expertise in pituitary diseases and calcium-phosphate metabolism. In recent years, his research interests have expanded to include endocrine disorders during pregnancy and pediatric endocrinology.