Letter to the Editor

Left ventricular hypertrophy and parathyroid hormone: a causal connection?

Klaus-Dieter Schlüter*, Hans Michael Piper

Physiologisches Institut, Justus-Liebig-Universität, Giessen, Germany

Received 12 March 1998; accepted 13 March 1998

We thank Dr. Duprez and his colleagues for their comment on our review article [1] underlining the pathogenic role of parathyroid hormone (PTH) for myocardial hypertrophy in vivo. As stated in the introduction to our review article, we summarized the present knowledge about the action of PTH on cardiovascular targets with a focus on the cellular level. A comprehensive review on clinical studies had not been intended. We nevertheless gladly take the opportunity to briefly comment on clinical studies focused on PTH and myocardial hypertrophy.

A correlation between PTH plasma levels and left ventricular hypertrophy (LVH) has been reported in the literature on patients with secondary hyperparathyroidism under hemodialysis [2], patients with primary hyperparathyroidism [3] and on patients with moderate essential hypertension [4]. In the case of primary and secondary hyperparathyroidism, parathyroidectomy and subsequent reduction of PTH plasma levels was accompanied by a reduction in left ventricular mass [3,5], indicating a causal role of PTH. Patients with moderate essential hypertension exhibit a close correlation between PTH plasma levels and LVH, as found in two studies, one by Bauwens et al. [4] and one by Hui et al. [6]. In these two studies, however, LVH was also found to correlate with plasma renin activity and aldosterone plasma levels. The authors of Ref. [4] concluded that “further studies of larger populations are needed to confirm this finding and to unravel the question of whether PTH acts directly on the cardiomyocyte or if we are only dealing with an epiphenomenon”. Meanwhile, several experiments with adult cardiomyocytes, cited in our review article, have demonstrated that PTH indeed exerts a direct growth promoting effect on the cardiomyocyte. This is suggestive of, but does not prove, a causal connection between PTH plasma levels and LVH in patients with moderate essential hypertension.

References


*Corresponding author. Tel.: +49 641 99 47 243; Fax: +49 641 99 47 239.

0008-6363/98/$19.00 © 1998 Elsevier Science B.V. All rights reserved.
PII: S0008-6363(98)00097-2