

Introduction

Jose-Luis Pérez-Castrillon¹

Published online: 9 August 2015
© Springer Science+Business Media New York 2015

Hypertension and osteoporosis are chronic degenerative diseases with a high incidence in developed countries, whose prevalence will increase as the population ages. They are silent processes with a high economic cost that becomes evident when the acute complications, including vascular accidents and osteoporotic fractures, become overt. Various epidemiological studies have shown an age-independent association between the two diseases. The relationship between osteoporosis and hypertension is not clearly established although numerous alterations of the calcium metabolism, which can cause a reduction in bone mass, have been described in hypertensive patients. These alterations included reduced ionic calcium, increased urinary calcium and urinary cAMP, high levels of PTH and calcitriol and increased intestinal calcium absorption; of these, only hypercalciuria has been associated with reduced bone mass.

At a molecular level, two papers explore two systems: the β -adrenergic and the renin–angiotensin system (RAS). Gonzalez-Rozas et al. summarize the relationship between sympathetic nervous system and bone remodelling. It is an interesting interaction between the skeleton and the brain

through leptin. Tamargo et al. explain the role of the components of the RAS in the bone metabolism and remodelling.

On the clinical side, there are four topics. The article of Butt et al. describes the association between hypertension, antihypertensive drugs and fractures in order to provide a comprehensive overview of the evidence in this area. The influence of thiazides on bone health was reviewed by Dr. Caudarella et al. The thiazides increase renal calcium reabsorption, and they have a direct effect on bone cells. However, their role in the management of osteoporosis is not clear.

The papers of Hernandez et al. review the impact of beta blockers on bone mineral density, bone turnover markers and fracture risk. Bislew et al. summarize the impact of the RAAS inhibitors on bone health and the relationship between aldosterone and parathyroid hormone.

A better understanding of the relationship between hypertension and osteoporosis will allow us to select the best therapeutic strategy for patients with osteoporosis and hypertension.

✉ Jose-Luis Pérez-Castrillon
castrv@terra.com

¹ University of Valladolid, Valladolid, Spain