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Minerva Endocrinologica 2018 June;43(2):131-2
DOI: 10.23736/S0391-1977.17.02781-X

EDITORIAL

AN UPDATE ON DISORDERS OF CALCIUM, PHOSPHATE AND BONE

Disorders of calcium, phosphate and bone: an overview

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This issue of *Minerva Endocrinologica* provides an update on disorders of calcium, phosphate and bone. Primary hyperparathyroidism is the most common cause of hypercalcemia and the third most common endocrine disease after diabetes and hyperthyroidism.[1] Increased incidences are reported along the introduction of routine calcium screening, especially in the Western countries. This is paralleled by a shift from symptomatic disease, involving the kidneys, skeleton, digestive tract, neurocognition and cardiovascular system, to subtle or non-specific symptoms. Surgery is not indicated in all cases, but imaging is recommended before surgery in all patients and mandatory before re-operation.[2, 3] ^{99m}Tc-sestamibi scintigraphy is still first-line imaging, while the role of novel PET tracers such as ^{11}C-methione and ^{18}F-fluorocholine in parathyroid imaging is being explored.[2, 3] In this issue, Treglia *et al.* give an overview on the diagnostic performance of different imaging methods in primary hyperparathyroidism.[4] While primary hyperparathyroidism almost always is due to benign disorders of the parathyroid glands (single or double adenomas in ~80% of cases and hyperplasia in ~15-20%), parathyroid carcinoma - especially in patients suffering from severe, symptomatic PTH-dependent hypercalcemia must not be overlooked.[1, 5] Parathyroid carcinoma is rare (<1%) but reports indicate an increasing incidence.[5] This aggressive disease is often sporadic but may occur as part of a genetic syndrome.[6] Cetani *et al.* present a clinical and genetic update on parathyroid carcinoma in this issue.[7]

Albright *et al.* not only described primary hyperparathyroidism in 1932,[8] but also pseudohyperparathyroidism,[9] *i.e.* resistance to the action of parathyroid hormone, and pseudopsuedohypoparathyroidism,[10] the two latter nowadays classified as disorders of PTH/PTHrP signaling.[11] In the present issue, Cianferotti and Brandi give an overview of the molecular biology of PTH/PTHrP signaling, as well as the related phenotypes and diagnostic work-up in disorders of PTH/PTHrP signaling.[12]

Lastly, in this issue of *Minerva Endocrinologica*, Maffezzoni and Formenti review the physiology of bone metabolism and turnover and give an overview on acromegaly and bone.[13] In acromegaly, characterized by excess secretion of GH and IGF-1, both decreased fracture risk [14] as well as increased vertebral fracture risk despite normal bone mineral density [15] has been reported. Bone metabolism in acromegaly has been a matter of debate in the last decades.

The authors of the current articles are acknowledged experts in their fields. I believe that the readers of *Minerva Endocrinologica* will value and appreciate this update on the disorders of calcium, phosphate and bone.

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Conflicts of interest.—The author certifies that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Article first published online: November 20, 2017. - Manuscript accepted: November 14, 2017. - Manuscript received: November 14, 2017.

(*Cite this article as:* Schalin-Jäntti C. Disorders of calcium, phosphate and bone: an overview. Minerva Endocrinol 2018;43:131-2. DOI: 10.23736/S0391-1977.17.02781-X)