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2018-06

Schalin-Jantti , C 2018 , ' Disorders of calcium, phosphate and bone : an overview ' ,
Minerva Endocrinologica , vol. 43 , no. 2 , pp. 131-132 . <https://doi.org/10.23736/S0391-1977.17.02781-X>

<http://hdl.handle.net/10138/248077>

<https://doi.org/10.23736/S0391-1977.17.02781-X>

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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 ¹¹C-methionine and ¹⁸F-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 re-

ports 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 pseudopseudohypoparathyroidism,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 risk¹⁴ as well as increased vertebral fracture risk despite normal bone mineral density¹⁵ 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)