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Laboratory investigation of vitamin D metabolites and bone metabolism markers

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EDITORIAL

It may well be stated that routine laboratories have been overwhelmed with requests for determination of 25-hydroxyvitamin D, the analyte reflecting vitamin D status. The number of test requests is increasing pretty much from year to year in essentially all known laboratory settings.

Given the pandemic of vitamin D insufficiency experienced on a global scale it is important to understand the laboratory implications pertaining to the determination of this not so easy analyte.

Similarly to quite a few other hormone determinations, harmonization and standardization is a valid issue and professional bodies have set up task forces to resolve the discrepancies experienced between the different currently available methodologies.

In the first article of three from this thematic issue, Cavalier *et al.* have comprehensively reviewed all data implicated in vitamin D testing that is relevant to the practicing laboratory professional.

Professor Etienne Cavalier is Head of the Department of Clinical Chemistry, University of Liege, Belgium. He is currently the president of the Belgian Royal Society of Laboratory Medicine. He is member of the Editorial Board of leading Journals in the field of Laboratory Medicine and has over 230 publications with an h-index of 28. He is member of numerous National and International Working Groups. Being a professor of

Clinical Chemistry, he has published extensively on ground breaking research in routine laboratory practice and has dealt not only with research issues but also the practical implication of novel biomarkers particularly in the field of musculoskeletal endocrinology and metabolism. His current research interests include Bones markers, vitamin D, PTH, vascular calcification markers, markers of acute kidney diseases, glomerular filtration rate (estimation, biomarkers), markers of frailty and sarcopenia, LC-MS/MS methods for steroids and peptides quantification. Given their professional achievements, Professor Cavalier and colleague are one of the most authentic to address this very important and relevant topic of vitamin D determinations.

Vitamin D is known to have various non-skeletal effects including its role in endocrinological conditions. The second article summarizes the importance of vitamin D in common endocrinological diseases penned by Muscogiuri *et al.*

Dr. Giovanna Muscogiuri graduated in Medicine from the Catholic University, Rome in 2006 and then carried out postgraduate residency in Endocrinology and Metabolic Disease at the same university, obtaining her degree of specialization in 2012. She attended the post-doctoral fellowship at University of Texas Health science Center at San Antonio, TX – USA. She is currently focused on the study of vitamin D and related diseases. She has received several awards for her scientific achievements in the metabolic research field. She has written or co-authored over 100 papers in peer-reviewed scientific journals. Muscogiuri et al place in perspective what our correct knowledge on vitamin D is with relevance to endocrinology. Furthermore, given the argument supporting achievement of optimal vitamin D status in the common endocrinological diseases dedicatedly discussed, the laboratory issues that may arise are briefly enumerated.

In the third article, Bhattoa summarizes the importance of determination of biochemical markers of bone turnover in metabolic bone diseases. Given the sensitive nature of their determination, pre-analytical, analytical and post-analytical issues are extensively discussed and their clinical utility is placed in perspective.