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Vitamin D deficiency and metabolic syndrome: Gap between bedside and bench top

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Abstract

Low plasma levels of 25-hydroxyvitamin D (25OHD) are common in obesity. Plasma levels of 25OHD have been inversely associated with obesity-related comorbidities such as insulin resistance, hypertension, inflammation and metabolic syndrome. The prevalence of 25OHD has been increasing over the past few decades as a result of decreased consumption 25OHD rich diet and inadequate sun exposure. Studies reveal that prevalence of 25OHD deficiency differs among different ethnic groups in the US; high among Blacks compared to Caucasians and Hispanics. However, prevalence of metabolic syndrome is notably high among Hispanics and Caucasians compared to Blacks. This raises the question of whether there is an independent association between vitamin D deficiency and metabolic syndrome in humans. Data of animal studies reveal inverse effect of 25OHD on renin angiotensin aldosterone system that is known to play a role in the disease process of metabolic syndrome. A recent in-vivo study, failed to demonstrate the role of 25OHD on pro-inflammatory factors that is typically up-regulated in individuals with metabolic syndrome. Whereas the same authors determined that in an in-vitro study using a tissue culture derived from adipocytes, pro-inflammatory factors were down regulated by 25OHD. In this session, the gap between the clinical and basic science findings of 25OHD and metabolic syndrome will be discussed.

Biography

Ganga Chandramohan M.D., MSc, is an associate professor at David Geffen School of Medicine at University of California, Los Angeles (UCLA). She has been a member of the Clinical and Translational Research Institution at UCLA for many years. She did her Pediatric Nephrology fellowship at the University of California, San Francisco where she worked on the mechanism of salt sensitive hypertension in the Dahl rat model. Subsequently, she was studying the role of oxidative stress in salt sensitive rats that was supported by American Heart Association Young Investigators' Award. She has published articles in several prestigious journals and had delivered talks in national and international scientific sessions. At the present time, serving as a member of the Medical Advisory Board Executive Committee, National Kidney Foundation, Southern California Section and a member of the Institutional Review Board at Los Angeles Biomedeical Institute.