

Vitamin D: An essential component of cancer therapy

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During the past decade, the effects of vitamin D [25(OH)D] on the immune system, pancreas, heart, brain, cardiovascular system, and in muscle have been identified. Correction of vitamin D deficiency is a highly cost-effective way to alleviate problems associated with lack of vitamin D. Vitamin D modulates immune-promoting and immune-suppressing effects of immune cells. In addition, active vitamin D [1,25(OH)₂D], calcitriol, has hormonal, paracrine, and intracrine actions. Calcitriol exerts potent tumor inhibitory and anti-proliferation effects on cancer cells in culture and in animal models of tumorigenesis. It influences the production and stability of proteins that are critical for healthy cell proliferation, and the regulation of cell differentiation and thus cancer prevention. The effects of vitamin D in decreasing cell proliferation and increasing cell differentiation, decreasing angiogenesis, and anti-inflammatory effects are favorable for retarding cancer cell growth and decreasing cancer metastasis. Vitamin D supports balanced cellular growth and differentiation. Vitamin D also induces apoptosis and enhances DNA repair and thus prevents mutagenesis. An inverse association exists between vitamin D and the incidence of certain cancers, including colorectal, breast, and prostate. Population-based studies have shown associations between low vitamin D status and increased cancer risks. In fact, the prevalence of certain cancers is least among those who live around the equator. Studies are under way to assess the ability of vitamin D to protect against lymphoma and cancers of the prostate, breast, colon, and ovary. Escalating vitamin D deficiency could be one of the reasons for the increasing incidence of some common cancers, especially in people who live in northern latitudes.

Biography

Professor Wimalawansa, a University Professor at Robert Wood Johnson Medical School. He earned his PhD 25 years ago in the field of endocrine pathology and an Executive Masters degree in Business Administration from Rutgers University. He has written several books, including one on hypercalcemia of malignancy, and more than 200 scientific publications, 45 reviews, 14 book chapters, and 280 scientific abstracts. He has presented more than 170 invited lectures and holds six medical patents. He is a regular scientific reviewer for more than 20 national and international scientific journals and serves on editorial boards. He has received multiple scientific awards, including several young investigator awards, the Dr. Boy Frame Award for Clinical Excellence in Metabolic Bone Diseases, American Endocrine Society Glen Foundation Awards, and an innovation award from the Asian Chamber of Commerce.

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