

PubMed

Display Settings: Abstract

Endocrine. 2014 Jan 9. [Epub ahead of print]

Vitamin D and cancer: the promise not yet fulfilled.

Bikle DD.

Author information

Abstract

The negative association of the latitude where people live and the incidence of non cutaneous cancer in that population in North America have been demonstrated in many studies for many types of cancer. Since the intensity of UVB exposure decreases with increasing latitude, and UVB exposure provides the mechanism for vitamin D production in the skin, the hypothesis that increased vitamin D provides protection against the development of cancer has been proposed. This hypothesis has been tested in a substantial number of prospective and case control studies and in a few randomized clinical trials (RTC) assessing whether either vitamin D intake or serum levels of 25 hydroxyvitamin D (25OHD) correlate (inversely) with cancer development. Most of the studies have focused on colorectal, breast, and prostate cancer. The results have been mixed. The most compelling data for a beneficial relationship between vitamin D intake or serum 25OHD levels and cancer have been obtained for colorectal cancer. The bulk of the evidence also favors a beneficial relationship for breast cancer, but the benefit of vitamin D for prostate and skin cancer in clinical populations has been difficult to demonstrate. RTCs in general have been flawed in execution or too small to provide compelling evidence one way or the other. In contrast, animal studies have been quite consistent in their demonstration that vitamin D and/or its active metabolite 1,25 dihydroxyvitamin D (1,25(OH)₂D) can prevent the development and/or treat a variety of cancers in a variety of animal models. Furthermore, 1,25(OH)₂D has been shown to impact a number of cellular mechanisms that would be expected to underlie its anticancer effects. Thus, there is a dilemma—animal and cellular studies strongly support a role for vitamin D in the prevention and treatment of cancer, but the clinical studies for most cancers have not yet delivered compelling evidence that the promise from preclinical studies has been fulfilled in the clinic.

PMID: 24402695 [PubMed - as supplied by publisher]

Grant Support

LinkOut - more resources

PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)

