Vitamin D may play an important role in cancer prognosis

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Researchers have found that people with very low levels of vitamin D appear to be at higher risk of death from all causes (including cancer) and say that vitamin D could play an important role in cancer prognosis in a paper published in *BMJ* today.

The main source of vitamin D is its production in skin thanks to the sun. Women are more prone to low vitamin D than men - and due to differing weather conditions, concentrations vary in populations across the world.

Vitamin D deficiency is especially common among the elderly who often have less sun exposure, but it is unclear what effect the production of vitamin D has on death.

So researchers investigated the association of vitamin D with deaths from all-causes, cardiovascular diseases and cancer. They paid particular attention to differences between countries, sexes and age groups.

Data were taken from seven population-based cohorts from the US and across Europe. All study participants were aged 50-79.

Results show that there was no clear trend of vitamin D by age, but average levels were consistently lower among women than men. Average levels increased with education, were lowest in obese individuals and higher among subjects who exercised.

During 16 years of follow-up, there were 6,695 deaths in 26,018 patients - 2,624 from cardiovascular diseases and 2,227 from cancer.

An association was found between those with the lowest levels of vitamin D and death from cardiovascular disease - in people with and without a history of the disease- and deaths from cancer in those with a history of the disease. No association was found between low vitamin D levels and deaths from cancer in those without a history of the disease.

The researchers say this shows an important role of vitamin D in the prognosis of cancer, although they add "we cannot exclude reverse causality, that is, that the cancer might have led to low vitamin D levels." There was also a dose-response relationship which was unchanged after excluding patients with a history of cardiovascular disease and cancer.

The researchers say that death from all causes as a result of low vitamin D has "high public health relevance" and should be given high priority. They also ask whether levels of vitamin D in specific countries, different sexes and seasons "should be considered for defining vitamin D deficiency" due to its varying levels.

They conclude that those with the lowest levels of vitamin D had an association "with increased all-cause mortality, cardiovascular mortality, and cancer mortality (in subjects with a history of cancer)." They say these effects were consistent across countries, sexes, age groups, and time of the year when blood tests were done and that "variation by geographic region, sex and season might need to be taken into account."

More information: Paper: www.bmj.com/cgi/doi/10.1136/bmj.g3656

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