

Clinical Study

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Prospective study of predictors of vitamin D status and survival in patients with colorectal cancer

K Ng¹, B M Wolpin¹, J A Meyerhardt¹, K Wu², A T Chan³, B W Hollis⁴, E L Giovannucci^{2,5,6}, M J Stampfer^{2,5,6}, W C Willett^{2,6} and C S Fuchs^{1,5}

¹Department of Medical Oncology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115, USA

²Department of Nutrition, Harvard School of Public Health, 655 Huntington Avenue, Boston, MA 02115, USA

³Department of Gastroenterology, Massachusetts General Hospital, 44 Fruit Street, Boston, MA 02114, USA

⁴Department of Pediatrics, Medical University of South Carolina, 173 Ashley Avenue, Charleston, SC 29425, USA

⁵Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, 181 Longwood Avenue, Boston, MA 02115, USA

⁶Department of Epidemiology, Harvard School of Public Health, 651 Huntington Avenue, Boston, MA 02115, USA

Correspondence: Dr K Ng, E-mail: Kimmie_Ng@dfci.harvard.edu

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Abstract

BACKGROUND: In an earlier study, a 25-hydroxyvitamin D₃ (25(OH)D) score calculated from known predictors of vitamin D status significantly predicted plasma levels of 25(OH)D and the risk of colorectal cancer, but the influence of the 25(OH)D score on survival after diagnosis is unknown.

MATERIALS AND METHODS: We prospectively examined the influence of post-diagnosis predicted 25(OH)D levels on mortality among 1017 participants in the Nurses' Health Study and Health Professionals Follow-Up Study who were diagnosed with colorectal cancer from 1986 to 2004. Colorectal cancer-specific and overall mortality according to quintiles of predicted 25(OH)D levels were assessed. Cox proportional hazards models were used to calculate hazard ratios (HRs) adjusted for other risk factors of survival.

RESULTS: Higher predicted 25(OH)D levels were associated with a significant reduction in colorectal cancer-specific (P trend=0.02) and overall mortality (P trend=0.002). Compared with levels in the lowest quintile, participants with predicted 25(OH)D levels in the highest quintile had an adjusted HR of 0.50 (95% CI, 0.26–0.95) for cancer-specific mortality and 0.62 (95% CI, 0.42–0.93) for overall mortality.

CONCLUSION: Higher predicted 25(OH)D levels after a diagnosis of colorectal cancer

may be associated with improved survival. Further study of the vitamin D pathway in colorectal cancer is warranted.

Keywords: vitamin D, colorectal cancer, epidemiology, diet and nutrition

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