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B-066 - A Prospective Study Of Plasma 25-Hydroxyvitamin D Concentration And Prostate Cancer Risk

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Purpose:

Mechanistic hypotheses suggest that vitamin D may be involved in prostate carcinogenesis through various effects on differentiation, apoptosis, and cell proliferation. Plasma parathyroid hormone (PTH) concentration, closely related to vitamin D metabolism may also play a role in prostate carcinogenesis. However, epidemiological evidence is lacking for PTH and inconsistent for vitamin D. Our objectives were to prospectively investigate the association between vitamin D status, vitamin D-related gene polymorphisms, PTH and prostate cancer risk.

Methods:

A total of 129 cases diagnosed within the Supplémentation en Vitamines et Minéraux Antioxydants (SU.VI.MAX) cohort were included in a nested case-control study and matched to 167 controls (13 years of follow-up). 25-Hydroxyvitamin D (25(OH)D) and PTH concentrations were assessed from plasma samples obtained at baseline. SNPs of selected vitamin D-related genes (VDR BsmI, FokI and Cdx2, CYP24A1 rs4809958, GC rs4588 and rs7041, RXR rs7861779 and rs12004589, CaSR rs1801725 and rs4678174) were determined with TaqMan assay. Conditional logistic regression models were computed.

Results:

Higher 25(OH)D concentration was associated with decreased risk of prostate cancer (OR Q4 vs. Q1=0.30 (0.12-0.77); P-trend=0.007). PTH concentration was not associated with prostate cancer risk (P-trend=0.4) neither did the studied vitamin D-related gene polymorphisms.

Conclusions:

In this prospective study, prostate cancer risk was inversely associated with 25(OH)D concentration but not with PTH concentration. These results bring a new contribution to the understanding of the relationship between vitamin D and prostate cancer, which deserves further investigation.

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