Calcitriol e vitamina A – efeitos antitumorais no carcinoma epidermóide de cabeça e pescoço – antiproliferativo, apoptótico e antiangiogênico

Anti-tumor effect of vitamin A and D on head and neck squamous cell carcinoma.


Source

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Abstract

OBJECTIVES:

Vitamin A and D(3) have a very strong differentiation induction effect.

STUDY DESIGN:

We examined the anti tumor effect on head and neck squamous cell carcinoma (HNSCC) by treatment with several vitamins having strong differentiation induction effects in vitro.

METHODS:

We used KB cell that an oral floor squamous cell carcinoma, vitamins as all-trans retinoic acid (ATRA), 4-[3,5-bis (trimethylsilyl) benzamido] benzoic acid (TAC-101), 1alpha,25(OH)(2)D(3) (calcitriol) and 22-oxa-1,25-(OH)(2)D(3) (OCT). We determined receptors of vitamin A and D(3) using RT-PCR. Furthermore, we investigated the proliferation of tumor cells in concentration dependency using [3H]TdR uptake method, apoptosis and apoptosis related factors using TUNEL method and real-time PCR, cell cycle changes using flow cytometry, changing of the sensitivity of using MTT method, cytokine production and the angiogenesis factor using ELISA, by treatment with these vitamins.

RESULTS:

The deficit of RAR-beta was found in the KB cell. Each vitamin suppressed the cell proliferation, induced apoptosis, and cell cycle arrest, upregulated sensitivity of the chemotherapeutics drugs and downregulated several angiogenesis factors and an apoptotic factor; survivin.

CONCLUSIONS:

These results support the idea that vitamin A, D(3) and their derivatives are useful for preventing and/or treating patients with HNSCC.

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