Glioblastoma. A vitamina D3 provoca apoptose

**Induction of apoptosis by vitamin D metabolites and analogs in a glioma cell line.**
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**Source**
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**Abstract**
Gliomas are the most common malignant tumors in brain. Recent studies demonstrate the capacity of 1alpha,25(OH)2D3 to specifically induce cell death (apoptosis) in model glioma cell lines and in primary cultures from tumor tissue, but not in primary astrocytes. In spite of this promising activity, a broad therapeutic application of vitamin D metabolites and analogs is still restricted because of their poor bioavailability and their hypercalcemic actions. Compared to 1alpha,25(OH)2D3, its natural 3alpha-epimer exhibits far higher metabolic stability and a reduced calcemic effect. Focusing on a possible therapeutic advantage of the 3alpha-conformation, we have examined the apoptotic potential of a representative set of vitamin D analogs, each of them in the 3alpha- and 3beta-conformation, and of natural vitamin D metabolites in the rat C6 glioma cell line. Exposure of these cells to the synthetic analogs resulted in all cases in a pronounced reduction of cell density (tested by incorporation of neutral red) and induction of apoptosis, monitored by staining nuclei with Hoechst 33258 dye and by following DNA fragmentation by capillary electrophoresis. The 3alpha-epimers showed equivalent or even higher activity on C6 cells than their respective 3beta forms. For their potent effects on growth and apoptosis of tumor cells and their high metabolic stability combined with a low calcemic potential, we speculate that these 3a-epimers could provide advantages for a prospective treatment of glioma.

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