Increased survival time in brain glioblastomas by a radioneuroendocrine strategy with radiotherapy plus melatonin compared to radiotherapy alone.

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The prognosis of brain glioblastoma is still very poor and the median survival time is generally less than 6 months. At present, no chemotherapy has appeared to influence its prognosis. On the other hand, recent advances in brain tumor biology have suggested that brain tumor growth is at least in part under a neuroendocrine control, mainly realized by opioid peptides and pineal substances. On this basis, we evaluated the influence of a concomitant administration of the pineal hormone melatonin (MLT) in patients with glioblastoma treated with radical or adjuvant radiotherapy (RT). The study included 30 patients with glioblastoma, who were randomized to receive RT alone (60 Gy) or RT plus MLT (20 mg/daily orally) until disease progression. Both the survival curve and the percent of survival at 1 year were significantly higher in patients treated with RT plus MLT than in those receiving RT alone (6/14 vs. 1/16). Moreover, RT or steroid therapy-related toxicities were lower in patients concomitantly treated with MLT. This preliminary study suggests that a radioneuroendocrine approach with RT plus the pineal hormone MLT may prolong the survival time and improve the quality of life of patients affected by glioblastoma.

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