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Immune-gene therapy of malignant tumours: Anti gene anti IGF-I strategy

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Strategy of immune-gene therapy based on anti-gene anti IGF-I approach (antisense/triple helix) established in the experimental treatment of murineglioma, hepatoma and teratocarcinoma has permitted to stop the development of cancer structures in tumour bearing animals. The effectiveness of anti-gene anti IGF-I therapy was evaluated in clinical treatment principally of brain malignant tumour – glioblastomamultiforme (six cases), and then in cancers of liver, colon, ovary, uterus and prostate (two cases of each). The glioblastomapatients treated by classical surgery followed by radiotherapy were "vaccinated" by injection of genetically modified cancer cells: cultured cancer cells, originated from tumor removed during surgery, were transfected by antisense/triple helix anti IGF-I expression vectors. The PBL cells of treated patients have demonstrated an increasing level of T CD8+CD28+ cells with characteristic switch from CD8+11b+ to CD8+11b- after every of the three vaccinations. The minimum survival of treated glioblastomapatients was 19 months and maximum 24 months (in two cases three and four years, respectively). Other cancer patients were supervised up to 19 months. The described Phase I trial presents promising results - an increase in immune response goes together with life span. These results have confirmed the role of immune phenomenon present in antisense anti IGF-I strategy investigated in preclinical experiments – suppression of animal tumours treated by the same cellular gene therapy inducing T CD8+ response.

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