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Prostaglandins Leukot Essent Fatty Acids. 2002 Nov;67(5):283-92.

Highly unsaturated fatty acid induced tumour regression in glioma pharmacodynamics and bioavailability of gamma linolenic acid in an implantation glioma model: effects on tumour biomass, apoptosis and neuronal tissue histology.

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Abstract

Highly unsaturated fatty acids (HUFAs) are naturally occurring anti-tumour agents. HUFAs act as intracellular signalling molecules in cell proliferation and death. In human glioma, HUFAs may stimulate tumour regression and apoptosis. An implantation glioma model, using the C6 glioma cell line, was used to investigate the bioactivity of locally infused n-6 HUFA gamma linolenic acid (GLA). Rat brains (15 normal and 37 C6 tumour bearing) were infused with vehicle or GLA 200 microM-2 mM. The most active local concentration of GLA for anti-tumour activity was 2 mM, infused at 1 microl/h over 7 days. Tumour regression, increased apoptosis and decreased proliferation were observed in tumours of rats infused with this concentration of GLA. Little effect on normal neuronal tissue was detected. The intraparenchymal route was an effective method of GLA administration in the treatment of glioma. These studies provide further insights into the potential role of HUFAs as anti-glioma agents.

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