



A service of the [U.S. National Library of Medicine](#)
and the [National Institutes of Health](#)

Select **19415456**

1: [J Neurooncol](#). 2009 May 5. [Epub ahead of print]



Estrogen increases survival in an orthotopic model of glioblastoma.

[Barone TA](#), [Gorski JW](#), [Greenberg SJ](#), [Plunkett RJ](#).

Department of Neurosurgery, Roswell Park Cancer Institute, Buffalo, NY, 14263, USA.

Despite the male preponderance for developing glial tumors and a body of published literature that suggests a female gender advantage for long term survival in both human and animal studies, there have been relatively few rigorous investigations into the hormonal effects on glial tumor growth. In a previous study, we concluded that estrogen played a major role in the female survival bias seen in an intracerebral nude rat model of glioblastoma multiforme. Here we explore the potential therapeutic effect of exogenous estradiol delivery in nude rats with orthotopic glioblastoma tumors and examine the mechanism of action of estradiol on reducing tumor growth in this animal model. We administered estradiol, in several dosing regimens, to male, female and ovariectomized nude rats in a survival study. Brain sections, taken at various time points in tumor progression, were analyzed for estrogen receptor protein, proliferative index and apoptotic index. Estradiol increased survival of male, female and ovariectomized nude rats with intracerebral U87MG tumors, in a gender specific manner. The estradiol mediated effect occurred early in tumor progression, and appeared to be caused in-part by an increase in apoptotic activity. It remains unclear if estradiol's effect is direct or indirect and if it is estrogen receptor mediated. Estradiol-based or adjunctive therapy may be beneficial in treating GBM and further study is clearly warranted.

PMID: 19415456 [PubMed - as supplied by publisher]
