

2009 Research Grants

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Improving Quality of Life and Targeting Tumor Cells in Pediatric Brain Cancer Patients Using the PPAR α Agonist, Fenofibrate.

Current radiation and chemotherapy treatments have increased the 5-year survival rate to ~80% for children with brain tumors. These children are at a high risk of developing learning and memory deficits, psychological and behavioral problems, and secondary malignancies. At this time, more than 250,000 children in the US are already at risk of developing these conditions and/or are presently experiencing mild to severe problems with school performance, the ability to hold a job, and interactions in social settings. There are no long-term successful treatments for children with radiation-induced brain injury. Data from our lab suggest that fenofibrate not only inhibits both whole brain radiation-induced inflammation and the decrease in neurogenesis in adult rodents, but it also can kill brain tumor cells in tissue culture. It is well known that many treatments that work in adults do not work in children or are much more dangerous to children. However, until now, there has been no good animal model for studying treatments for pediatric radiation-induced brain injury. The successful completion of the proposed specific aims in this grant offers not only the promise of finding a treatment to overcome the late effects that occur in children surviving brain cancer, but it will also provide the data to submit a competitive NIH grant proposal to continue the search for treatments that will improve the quality of life for the survivors of childhood brain cancer.