NON-TECHNICAL ABSTRACT

The overall objective of this project is to perform a clinical trial in glioblastoma patients comprising injections of tumor cells genetically modified to secrete an immunostimulatory substance termed interleukin-2 (IL-2). The study will evaluate the safety, anti-tumor effects and immune responses induced by injections with escalated doses of the irradiated, genetically modified tumor cells. We have treated one patient with glioblastoma multiforme who had failed conventional therapy with IL-2 modified cells. No significant toxicity was noted at the injection sites and post treatment monitoring of blood and urine tests of organ function revealed no significant changes from pre-treatment values. Anti-tumor immune responses were observed during the course of therapy. This patient's tumor, termed GT9, will be utilized to inject other patients. In this study, a group of patients will be injected with their own irradiated tumor cells which have been genetically modified to secrete IL-2 and a second group of patients will be treated with IL-2 gene modified irradiated GT9 cells. Patient groups will receive injections with increasing doses of the genetically modified tumor cells. The patients will be monitored for toxicity, anti-tumor responses and the induction of anti-tumor immunity. The results of the trial should permit an assessment of the safety of this form of IL-2 gene transfer and provide initial data to evaluate the potential utility of IL-2 gene therapy in glioblastoma patients.