

Efficacy of Carboplatin Administered Concomitantly with Radiation and Isotretinoin as a Pro-Apoptotic Agent in Other Than Average Risk Medulloblastoma/PNET Patients (ACNS0332)

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Synopsis:

Medulloblastoma/PNET is the most common malignant childhood brain cancer. The goal of this study is to determine whether radiosensitization with carboplatin or the addition of Isotretinoin to maintenance therapy improves cure rates for children with other than average risk medulloblastoma/PNET. All patients will receive standard therapy consisting of surgery, radiation therapy and chemotherapy. Subsets of patients will be randomly assigned to receive carboplatin radiosensitization, Isotretinoin during maintenance, both, or neither. Carboplatin has activity as a single agent against medulloblastoma and it has been shown to enhance radiation-induced tumor cell kill. A previous study, CCG-99701, demonstrated that it was feasible and safe to administer carboplatin on a daily basis during radiation therapy. Laboratory-based studies have shown that Isotretinoin effectively kills patient-derived medulloblastoma cells *ex vivo* and in animal models of medulloblastoma. Furthermore, this agent acts synergistically with cisplatin *in vitro* and in animal models. Isotretinoin has previously been safely administered to neuroblastoma patients at the same dose planned for this study. Quality of life, neuropsychiatry, and correlative biology studies are incorporated into the research design.