

Subcutaneous study on the controlled release of Etanidazole and Taxol for the treatment of Glioma

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Abstract – BALB/c nude mice 6 weeks old were inoculated with glioma C6 cell-line and the efficacy of the different amount of Etanidazole-discs and Taxol-microspheres was investigated. Poly (D,L-lactic-co-glycolic acid) (PLGA) was used as the main encapsulating polymer and polyethylene glycol was added to increase the porosity. The 1% drug loading microspheres of each drug were produced by spray drying and the discs were obtained by compressing the Etanidazole-microspheres. Intra-tumoral injection followed by irradiation resulted in high systemic dosage and thus systemic toxicity. Tumors grown for 6 days, 9 days and 16 days were implanted with 0.5 mg or 1.0 mg or 1.5 mg of the drug. A radiation dosage of 2 Gy each time for a number of times was given for animals implanted with Etanidazole and no irradiation was given for animals implanted with Taxol. Increasing the number of doses clearly decreased the rate of tumor growth. The increase in the amount of drug on smaller sized tumors controlled the tumor better and there was agglomeration of the microspheres resulting in deviation of release profile of the drug as compared to the in vitro studies. It was observed that 1.0 mg of Taxol given to a tumor grown for 6 days was able to suppress the tumor for a total period of approximately two months and no tumor resurrection was observed during the second month.