

Comparative Oncology and Clinical Translation of glyco protein conjugated Gold Nano Therapeutic Agent (GA-¹⁹⁸AuNP)

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Abstract:

As part of our efforts toward clinical translation of GA-¹⁹⁸AuNP, our studies are focused on therapeutic efficacy of nanoparticulate GA¹⁹⁸AuNP agent in dogs with prostatic carcinoma. The overall goal is to gain clinical insights on therapeutic efficacy of GA¹⁹⁸AuNP in a large animal model. We have performed a phase I clinical trial using GA-AuNP administered intravenously or intratumorally by injection or infusion. CT scans were performed prior to injection and 24 hours post injection in 3 of the 4 dogs. Following injections, dogs were allowed further treatment as recommended by the primary attending clinician. Four dogs have been treated to date. Complications related to GA-AuNP treatment were not observed, and all 4 dogs received adjunctive treatment with radiation therapy and/ or chemotherapy. These preliminary studies have clearly provided compelling evidence on the therapeutic potential of biocompatible GA-AuNP for their utility as novel therapeutic agents in treating various types of inoperable solid tumors. Intra-tumoral and intravenous administration of GA-AuNP is safe in dogs with spontaneously occurring tumors. As further therapeutic efficacy studies continue, the outcome of this clinical trial in a large animal model will generate therapeutic efficacy data which will be used for filing IND application for Phase I clinical trial studies. This clinical translation effort provides significant advances in terms of delivering optimum therapeutic payloads into prostate cancers with subsequent reduction in tumor volume, thus may effectively reduce/eliminate the need for surgical resection. This presentation will include details of clinical translation of GA¹⁹⁸AuNP in prostate tumor bearing dogs.