Aerosolized Chemotherapy

Regional chemotherapy has been proposed as a treatment modality in a number of cancer settings. In primary or metastatic lung cancer, administration of chemotherapy via inhalation could increase exposure of lung tumor to the drug, while minimizing systemic side effects. Several proof of concept studies in animal models of metastatic or primary lung cancer have demonstrated the safety, pharmacokinetic advantage, and antitumor effect of aerosol administration of several chemotherapeutic agents including doxorubicin, gemcitabine and liposome-encapsulated formulations of paclitaxel and 9-nitrocamptothecin (9-NC). Recent phase I studies have demonstrated the feasibility of aerosol delivery of doxorubicin and liposomal formulations of 9-NC and cisplatin in patients with primary and metastatic lung cancer with a limited pharmacokinetic profile consistent with the observed low systemic toxicity. Further studies integrating safety, pharmacokinetic, and efficacy considerations are required to determine whether there is a place for local administration of chemotherapy via inhalation in lung cancer.

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