Title:

Enhancing Nab-paclitaxel-based Chemotherapy Response: Novel Therapeutic Strategies for Advanced Pancreatic Cancer

Presentation Summary:

Pancreatic cancer is projected to become the second most common cause of cancer-related death in the United States in 2030. The 5-year survival rate for pancreatic cancer remains less than 6% and the poor prognosis is attributed to several factors including late-stage diagnosis, an aggressive progression of the disease and high resistance to conventional therapies. Gemcitabine remained the standard therapy for pancreatic cancer since 1997 despite only a minimal clinical benefit. Our laboratory demonstrated that nanoparticle albumin-bound paclitaxel (nab-paclitaxel) is a superior chemotherapeutic agent compared with gemcitabine or docetaxel. These findings played a significant role in recent FDA approval of the nab-paclitaxel plus gemcitabine for advanced pancreatic cancer. Angiogenesis, an essential process for tumor growth and metastasis, is a well-established target for cancer therapy, including pancreatic cancer. Our laboratory has demonstrated that the effects of nab-paclitaxel can be enhanced with antiangiogenic agents, which clinically could relate to greater responses and improved antitumor results. We are currently evaluating enhancement in nab-paclitaxel-based chemotherapy response by targeted inhibition of other potential pathways of pancreatic cancer progression including MAPK-PI3K, MMP9 and TGF-β. These studies will provide a better understanding of molecular mechanisms of pancreatic cancer progression and open realistic avenues to double patient survival.

PDF Links:

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