The Immunogenic Effect of Local Radiation Therapy in a Murine Model of Mesothelioma

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Abstract

Malignant pleural mesothelioma (MPM) is a rare cancer, associated with asbestos exposure that arises from the mesothelial surfaces of the pleural cavity. MPM has a poor prognosis and the outlook has not been improved by newer therapeutic interventions. A new approach developed in our lab, focusing on Surgery for Mesothelioma After Radiation Therapy (SMART) showed promising results in a phase I/II clinical trial. We believe that radiation is important to achieving activation of the immune system and may contribute to the benefits observed in patients. The goal of this project was to develop a mouse model to analyze the immunogenic effect of Local Radiation Therapy (LRT) and its impact on immune cell recruitment and activation in the context of MPM. Results from these studies may have clinical implication for the treatment of MPM, where combination of LRT and other treatments such as immunotherapy may prove useful.