Award ID:
RP150293

Project Title:
Identification of clinically relevant targets for radiosensitization

Award Mechanism:
Individual Investigator

Principal Investigator:
Skinner, Heath

Entity:
The University of Texas M.D. Anderson Cancer Center

Lay Summary:

The treatment for head and neck cancer usually involves radiotherapy. However, right now there is only one commonly used drug that specifically targets an alteration in the tumor that makes it resistant to radiotherapy. More drugs like this are needed. This project will look at 50 cell lines from head and neck tumors in a broad way to see if any mutation, gene or protein is highly associated with resistance to radiation. We will also use an animal model of head and neck cancer to screen hundreds of proteins that may be related to resistance to radiotherapy and that can be targeted using existing drugs. Following these studies, we will then determine if any targets derived from the above studies are associated with recurrence following radiotherapy in head and neck cancer patients. Finally, we will then utilize FDA-approved drugs that are focused on these targets to make head and neck cancer cells and tumors more sensitive to radiotherapy. The reason for these experiments is to find drugs that have a high likelihood of working in patients before using them in a trial. Many trials are performed in cancer, with only a very few drugs working in patients. Our hope is by narrowing down the field to only those drugs that are potent against targets that are very important to resistance to radiotherapy, we will be far more likely to start a clinical trial with a high likelihood of helping patients live longer.