



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP120258

Project Title:
Towards Personalized Cancer Therapy: Stratification of Oral and
Pharyngeal Cancer Based on p53 Mutational Status

Award Mechanism:
Individual Investigator

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

Lay Summary:

Head and Neck Cancer is the 6th leading cause of cancer death worldwide, and the cure rate for this disease has not improved in the past 50 years. Treatments for this disease include surgery, radiation, and chemotherapy. Decisions about how to treat each patient are made today based on the size of the tumor, where it is located, and how it looks under a microscope. We try to use the fewest types of treatment for each patient in order to cure the cancer while lessening treatment related side effects that can make it difficult to breathe, swallow, and/or speak. Unfortunately, the size, location, and microscopic appearance of a cancer do not always accurately tell us if it will be very aggressive or not. In fact, small cancers can behave very aggressively and come back after treatment. Also, some very large cancers that look very aggressive may respond well to simple treatment, yet more complicated treatments that result in increased side effects are used, when perhaps unnecessary. TP53 is a gene that produces a molecule, named p53, which protects all human cells from the development of cancer. This gene is commonly mutated in head and neck cancer, and there is strong evidence that specific types of mutations in TP53 are associated with more aggressive cancers. Our goal is to identify which mutations are most important in patients so that we can better predict which patients will do well with standard treatment, and identify those patients that require additional treatment to improve their chance of cure. In completing these studies, we hope to develop a way to predict whether a head and neck cancer patient with a specific TP53 mutation is likely to be cured or not with a particular type of treatment. We expect that this research will take us closer to the goal of using a simple test to select the best treatment for each head and neck cancer patient that gives them the greatest chance of a long, high-quality life.