

Radhika G. Andavolu, PhD, MB (ASCP), MBA

The results of a study on gene expression (the process by which genetic information manifests in cells) in prostate cancer were revealed by Radhika G. Andavolu, PhD, director of the Genetics Research Institute of the Desert (GRID) located at Eisenhower Medical Center.

Dr. Andavolu presented the study results at the American Association for Cancer Research – National Cancer Institute – European Organization for Research and Treatment of Cancer International Conference Molecular Targets and Cancer Therapeutics in Boston, Massachusetts, November 15 to 19, 2009. More than 3,000 researchers and scientists from leading industry, academic, and government institutions attend the conference each year to discuss innovations in drug development, target selection and the impact of new discoveries in molecular and cellular biology.

In this new study, which was a continuation of a study begun in 2008, Dr. Andavolu along with co-investigators Murthy Andavolu, MD and Dennis Frisman, MD conducted microarray testing — a way of testing cells to see which genes are expressed and which are not — on samples of prostate cancer tissue.

The research study is designed to develop a genetic profile of cancer related genes that will enable clinicians to more accurately determine a patient's prognosis. "Being able to identify the expression pattern of these genes from the original tumor, meaning whether the genes were 'turned on' or 'turned off,' provides us with valuable information about a patient's prognosis. This type of information cannot always be obtained from standard clinical features, such as tumor grade or residual disease status," explains Dr. Andavolu. "With the identification of each new gene expression profile, we come one step closer to being able to develop treatments tailored to individual cancer patients." "...Our research would help in predicting an individual's responsiveness to chemotherapy."

The study compared prostate cancer tissue to an individual's healthy tissue to determine if the tumor tissue had any differential gene expression. Dr. Andavolu's team decided to test prostate cancers because this tissue is very hard to work with and tissue samples are minimal. "We thought if we tested the prostate tissue and the methodology works, it is going to work for any other tissue. Now, after the presentation and validation of these results at the meeting, we are optimistic and feel more confident in our approach," says Dr. Andavolu.

Today, the challenge in treating cancer patients is determining which patients will benefit from certain drug treatments. "We are starting the Phase II study this fall, and it is hoped this research is a step toward more rapid developments in personalized medicine and superior patient care. If we can use these gene profiling protocols, we can help a greater percentage of people get the best, most appropriate care," says Dr. Andavolu. "For example, our research would help in predicting an individual's responsiveness to chemotherapy."