CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP170307

Project Title:
BIOMARKER-BASED TREATMENT OF POOR PROGNOSTIC MESENCHYMAL SUBTYPE IN GASTRIC CANCER

Award Mechanism:
Individual Investigator

Principal Investigator:
Lee, Ju-Seog

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

Lay Summary:

Our study aims to develop marker-based treatment strategy for patients with gastric cancer. Gastric cancer is one of the most virulent cancers in the world. Each year over 950,000 of people are diagnosed with gastric cancer and over 700,000 patients die worldwide (3rd leading cause of death). The 5-year survival rate after surgical resection is only around 40% and many patients succumb to this malignant disease due to recurrence after treatment. However, there are no reliable methods (or predictive markers) that can identify patients with high risk of recurrence after treatment and therapeutic strategies to prevent recurrence yet.

By analyzing genomic data from gastric cancer, we found that IGF1 and its receptor IGF1R are activated in 30% of stomach cancer and that survival of these patients after treatments are very poorer than those without activation of IGF1/IGF1R. Fortunately, these genes are druggable targets and specific inhibitors are currently available and in clinical trials for other cancers. Therefore, in proposed study, we aim to (1) find and validate robust genetic markers that can easily identify patients with activated IGF1/IGF1R, (2) test if patients with activated IGF1/IGF1R will have benefit of treatment targeting IGF1/IGF1R. If successful, this will open up new opportunity for marker-based treatment for poor prognostic patients with gastric cancer by identifying them in prior to treatments, leading to precision medicine or personalized medicine for patients with gastric cancer. Because inhibitors of IGF1/IGF1R are currently under clinical trials for other cancer types, success of our study will lead to marker-based clinical trials for gastric cancer in 2 to 3 years. In addition, since current clinical trials on IGF1/IGF1R inhibition on other cancers are hampered by unexpected resistance to treatments, any new findings from current study would help overcoming the problem in other cancers.