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Analysis of Molecular Residual Disease and Recurrence in 18 patients with Stage II/III Esophageal Cancer: Longitudinal ctDNA Monitoring as a Biomarker for Detection of Local Recurrence

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Abstract

Purpose

There is a high risk of recurrence in esophageal cancer, especially in the first two years after treatment with a curative intent1. The histology, squamous cell carcinoma or adenocarcinoma, with adenocarcinoma being more prevalent in the US2, determines the treatment modality. In this study, we look at (1) the rate of recurrence in patients treated with neoadjuvant chemoradiation followed by esophagectomy, esophagectomy alone, and chemoradiation alone; (2) Signatera ctDNA monitoring being the means of detecting early recurrence; and (3) patients with no recurrence after chemoradiation alone.

Methodology

18 subjects have been enrolled in this clinical-trial. Surveillance post-curative treatment consists of a history & physical every 3-6 months for 1-2 years, 6-12 months every 3-5 years, imaging studies, chemistry panel, CBC, upper GI endoscopy and biopsy if clinically indicated.

At baseline visit, whole blood samples were collected for Signatera ctDNA monitoring and paired with biopsy tissue samples. Subsequently, blood draws were collected every 3 months for 2 years, every 6 months for 1 year, and every year for 2 years for a total of 5 years of data collected from baseline.

Results

Six out of eighteen subjects showed recurrence of disease within 2 years after date of initial diagnosis. Of the six patients, five subjects had shown an increase in their Signatera ctDNA blood test prior to imaging and endoscopy/biopsy confirming recurrence of disease. Of the six subjects with recurrence, five had received chemoradiation alone with 1 subject receiving neoadjuvant chemoradiation followed by an esophagectomy. One subject passed away prior to receiving a ctDNA post baseline blood draw. Six out of eighteen subjects showed no recurrence after chemoradiation alone. Eight subjects were lost to follow up due to deaths.

Conclusions

A total of 33% of the subjects developed recurrence of their esophageal cancer within two years after their initial diagnosis. Using the Signatera assay, we were able to detect the increase in ctDNA following treatment. Most of these subjects received chemoradiation alone with evidence of their Signatera ctDNA being an indicator of early recurrence. Additionally, a total of 33% showed no recurrence after chemoradiation alone.

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