Tumor Mutation Burden: Current Status

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TRANSCRIPT

Tumor mutational burden is a new biomarker that comes along when we order next-generation sequencing for our patients with non-squamous non-small cell lung cancer. In particular though with the CheckMate-227 study which looked at combinations of Opdivo and Yervoy, patients with both squamous non-small cell lung cancer as well as non-squamous non-small cell lung cancer who had a high tumor mutational burden, defined as greater than 10 mutations per megabase by the FoundationOne Companion Diagnostic, had a substantial improvement in one year progression-free survival. We await overall survival data for these patients to determine if the combination of Yervoy and Opdivo may benefit these patients with high tumor mutational burden and may provide a combinatorial immunotherapeutic approach without chemotherapy with potential long-lasting responses similar to what we see in metastatic melanoma and clear cell kidney cancer.

Currently tumor mutational burden is done on tissue testing. However, the ability to look for driver mutations and a substantial number of genes in blood by cell-free DNA represents a new way of looking at the cancer. The idea that one day we may be able to (in blood) look for driver mutations for EGFR, ALK, and ROSS1 in addition to the other NCCN recommended molecular targets that we can currently do in addition tumor mutational burden is one area of particular interest that may help patients in the future who have limited tissue and are unable to get tissue based testing for TMB (tumor mutational burden).

https://www.youtube.com/watch?v=yQjs9QeNZKA&feature=youtu.be