

Extreme Response to Immunotherapy in an Estrogen Receptor Positive Breast Cancer: A Case Report

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Introduction: Currently, immune checkpoint inhibitors are not approved by the FDA for HR-positive breast cancer, although an extreme response was seen in the case below.

Case: The patient is a 72 year old, woman who was diagnosed in 1996, at age 48, with stage T2N2aM0, ER-positive infiltrating ductal cancer in her left breast. She completed 4 cycles of doxorubicin and cyclophosphamide and she received adjuvant tamoxifen, until 2004, then was switched to letrozole, which was completed in April, 2011, thus completing 15 years of endocrine treatment. She recurred in 2017 with pleomorphic invasive lobular carcinoma, ER 5%, PR 0%, and HER2 not amplified by FISH. She eventually progressed through 5 lines of treatment. The 2/2019 biopsy specimen was sent for next generation sequencing. The tumor was found to have a high Mutational Burden (MB) (21 m/MB, 96th percentile for breast cancer). Pembrolizumab was provided on compassionate plea from the manufacturer in 3/2019. She had a complete response with resolution of severe brachial plexopathy pain.

Discussion: Pembrolizumab is associated with good outcomes in cancer other than breast cancer. In these cancers, a higher mutation burden is associated with response. The patient in this case had a high tumor MB, which prompted treatment with pembrolizumab. This case shows the importance of next generation sequencing and PD-L1 staining, enabling the use of immune checkpoint inhibitors as a possible treatment option for HR-positive breast cancer if the tumor has a high tumor MB and/or expression of PD-L1 in TILs.

Biography

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