

Novel biomarkers in immune therapy response

Brief Synopsis:

Currently PD-L1 protein expression and MSI high / MMR deficiency are the only two predictive markers for atezolizumab and pembrolizumab, respectively, supported by clinical trial data in metastatic breast cancer. The FDA is currently considering approval of pembrolizumab for metastatic solid tumors with high mutational burden-high. In metastatic cancer, several immune gene signatures (T-cell inflamed / IFN γ) and high TIL count are also associated with greater likelihood of benefit from immunotherapy. A combination of these and other emerging image analysis-based biomarkers may provide the most accurate response prediction. In early stage breast cancer, in the neoadjuvant setting, the clinical utility of PD-L1 expression and other immune markers to select patients for immune checkpoint therapy is less clear. Existing data indicates that both PDL1-positive and -negative, and immune-rich and immune-poor triple negative breast cancers experience improvement in pathologic complete response rate with inclusion of immune checkpoint inhibitors with chemotherapy. I will review recent developments in this rapidly evolving field.