Immunotherapy for TNBC

Hope S. Rugo, M.D., FASCO
Professor of Medicine
Director, Breast Oncology and Clinical Trials Education
UCSF Helen Diller Family Comprehensive Cancer Center
San Francisco, California, U.S.A.

Triple-negative breast cancer (TNBC) is an aggressive subtype of mammary carcinoma. TNBC is more likely than other breast cancer subtypes to benefit from immune checkpoint blockade therapy due to its higher immunogenicity, higher enrichment by tumour-infiltrating lymphocytes (TILs), and higher levels of programmed cell death ligand 1 (PD-L1) expression, suggesting that immunotherapy may be a viable treatment strategy. Phase III clinical trials have shown that atezolizumab or pembrolizumab is well-tolerated in combination with chemotherapy, with progression-free survival and overall survival benefit in PD-L1 positive (IC>1% / SP142 or CPS≥10 / 22C3) metastatic TNBC patients treated first line. SP142 is currently the only validated assay for selecting patients who may derive benefit from IMpassion130 regimen. In post-hoc analyses of IMpassion130, PD-L1 status was also evaluated by Dako 22C3 and VENTANA SP263 assays. Differences in SP142+ vs 22C3+ or SP263+ populations at model-derived cutoffs suggest that SP142, 22C3 and SP263 may not identify the same tumor biology. Updated KN-355 survival results demonstrated that the addition of the immunotherapy to nab-paclitaxel, paclitaxel, or gemcitabine/carboplatin resulted in a significant improvement in progression-free survival (PFS) and overall survival (OS) vs chemotherapy alone in first-line patients with PD-L1-positive (CPS ≥10) metastatic triple-negative breast cancer. In early TNBC, atezolizumab and pembrolizumab have been tested in combination with standard neoadjuvant chemotherapy, resulting in a higher complete pathologic response rate than standard neoadjuvant chemotherapy alone, regardless of disease PD-L1 status.