Managing Triple-Negative Breast Cancer with Immunotherapy Drug Sacituzumab Govitecan

One of the recent advances in the treatment of breast cancer is Sacituzumab Govitecan. Sacituzumab Govitecan contains an antibody specific to a receptor called trophoblast cell-surface antigen 2 (Trop-2) that is found on cancer cells. This anti-Trop-2 antibody is joined to SN-38, the active ingredient of the anti-cancer drug irinotecan. A proprietary linker, that can be broken apart by water, joins the two. Unlike traditional chemotherapy, Sacituzumab Govitecan delivers an anti-cancer payload only to cells with Trop-2 receptors, thereby minimizing damage to healthy tissue.

Triple-negative breast cancer (TNBC) is an uncommon type of breast cancer. Here, the tumor cells lack or have low levels of estrogen receptors (ER) and progesterone receptors (PR), and do not have high levels of human epidermal growth factor receptor 2 (HER2).

In this review, we collected and analyzed studies on the efficacy of Sacituzumab Govitecan on TNBC. There were two milestone clinical trials, the IMMU-123 trial and the ASCENT-05 trial. There are several other ongoing trials.

The IMMU-123 trial consisted of 108 patients with metastatic TNBC who had received a median of three anti-cancer therapies previously. Metastasis refers to the spread of cancer to other parts of the body. 34.3% of patients responded to Sacituzumab Govitecan and the median response was 9.1 months. Median progression-free survival (PFS)—the period during which there is no growth in the cancer—was 5.5 months. Overall survival was 13 months.

The ASCENT-05 trial enrolled 468 patients with metastatic TNBC who had completed at least two chemotherapeutic treatments previously. It compared the effectiveness of conventional chemotherapy against a combination treatment of Sacituzumab Govitecan and another immunotherapy drug, Pembrolizumab. Conventional treatment consisted of Pembrolizumab or Pembrolizumab with another anti-cancer drug, Capecitabine. Both

treatments were given after surgery. 33.3% patients responded to Sacituzumab Govitecan against 5.3% patients to conventional treatment. The median PFS and overall survival for Sacituzumab Govitecan were 5.6 months and 12.1 months, against 1.7 months and 6.7 months for conventional treatment.

Furthermore, patients on Sacituzumab Govitecan experienced fewer severe adverse reactions than those on traditional chemotherapy. For example, only 10% patients experienced neutropenia (low white blood cell count) or diarrhea compared to 50% and 18% patients undergoing traditional chemotherapy.

Overall, the significantly higher response and survival rates offered by Sacituzumab Govitecan, as well as the lower frequency of adverse effects reveal its potential as a therapeutic option for breast cancer, specifically metastatic TNBC. However, further research is required.

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