

Trastuzumab Emtansine (T-DM1) for HER2-Positive Metastatic Breast Cancer

Who Might Benefit?

Breast cancer is the most frequent cancer and the leading cause of cancer-related death among women worldwide. In Canada, breast cancer is the second-leading cause of death in women. Every day in Canada, approximately 65 women are diagnosed with breast cancer and 14 women die because of the disease.

A specific protein called human epidermal growth factor receptor 2 (HER2) may be found in large amounts on the surface of some cancer cells. Women with breast cancer who are in an advanced stage of the disease, and who test positive for the HER2 gene, experience an aggressive form of the cancer and have shorter survival.

Approximately one in five patients diagnosed with breast cancer will have HER2-positive disease.

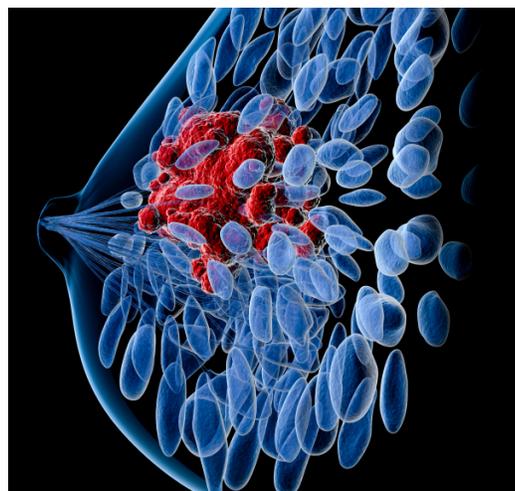
> Current Practice

Chemotherapy is the standard treatment for advanced breast cancer. This type of treatment involves the use of chemotherapy to stop the growth of cancer cells, either by stopping them from dividing or by killing them. Combining HER2-targeting medicines with standard chemotherapy is an effective therapeutic approach for patients with HER2-positive advanced breast cancer.

T-DM1 is a novel, targeted therapy for the treatment of HER2-positive advanced breast cancer

> What's New?

The introduction of trastuzumab emtansine (T-DM1) provides an alternative treatment option for patients with HER2-positive advanced breast cancer who



have been previously treated with trastuzumab (an anti-HER2 treatment) and a taxane (a form of chemotherapy).

T-DM1 is a single agent that incorporates three components: an anti-HER2 agent (trastuzumab) that recognizes and attaches to HER2 receptors, a stable linker, and an anti-cancer substance (DM1). T-DM1 allows drug delivery specifically to HER2-cancer cells, thereby minimizing the exposure of normal cells to therapy.

> Potential Advantages

When compared with standard treatment, clinical evidence suggests that T-DM1 alone can prolong the chance of living without disease progression, improve a patient's overall survival by 5.8 months, and lower adverse events. It potentially improves health-related quality of life. This targeted approach allows for greater efficacy and lowered toxicity, compared with standard treatment.