

Can Endometrial Cancer Be Treated with Immunotherapy?

Keytruda can treat women whose endometrial cancer cells have certain characteristics.

December 24, 2020 By Dana-Farber Cancer Institute

Immunotherapy, which boosts the patient's immune system response against cancer, is an emerging area of treatment and research. The immunotherapy drug pembrolizumab (Keytruda) is approved to treat women whose endometrial cancer cells have certain characteristics.

What type of endometrial cancer does immunotherapy work for?

Pembrolizumab is effective in shrinking or slowing the growth of a minority of [endometrial cancers](#). These are advanced cancers whose cells are termed microsatellite-instable (MSI) or are MMR (mismatch repair)-deficient. Both MSI and MMR deficient tumors have large numbers of DNA mutations, making them “hot” — that is, likely to provoke a response by immune T cells.

Most endometrial cancers lack MSI or MMR characteristics, and so are deemed “cold” and not good candidates for immunotherapy treatment with pembrolizumab.

Advanced or recurrent endometrial cancers classified as MSS (microsatellite stable) can be treated with pembrolizumab plus the drug lenvatinib, which targets several growth factor receptors that play roles in signaling pathways that promote cancer.

How is early stage endometrial cancer treated?

Surgery followed by radiation therapy and/or chemotherapy remain the standard treatments for early stage endometrial cancer.

How does pembrolizumab work?

Pembrolizumab targets PD-1, a protein on immune system T cells that prevents T cells from attacking other cells, including cancer cells. By inhibiting PD-1, pembrolizumab frees immune T cells to detect and attack cancer cells. Drugs like pembrolizumab are called checkpoint inhibitors because they target the checkpoints that restrain the immune response.

Ongoing studies

Researchers at Dana-Farber and beyond are attempting to broaden the use of immunotherapy in

endometrial cancer patients.

“Ongoing studies are assessing the role of immunotherapy combined with chemotherapy in newly diagnosed endometrial cancer, as well as comparing pembrolizumab plus lenvatinib to standard-of-care chemotherapy, to see if it might have superior activity in MSS cancer,” says [Joyce Liu, MD, MPH](#). She is the director of clinical research in the Division of [Gynecologic Oncology](#) at Dana-Farber.

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