What Melanoma Patients Need to Know About Amtagvi

Amtagvi, also known by the generic name lifileucel, uses Tumor Infiltrating Lymphocytes (TILs) to treat patients with advanced melanoma, a skin cancer.

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You may have heard of AMTAGVI, also known by the generic name lifileucel, a new therapy that recently earned FDA approval.

AMTAGVI is a type of cellular therapy that uses Tumor Infiltrating Lymphocytes (TILs) to treat patients with advanced melanoma whose melanoma hasn't responded — or quit responding — to PD-1 based immunotherapies and BRAF/MEK targeted therapy if their melanoma has the BRAF mutation.

If you have questions about AMTAGVI, keep reading:

What is AMTAGVI?

AMTAGVI is a Tumor-Infiltrating Lymphocyte (TIL) therapy used in the treatment of advanced melanoma. TIL Therapies involve extracting immune cells called lymphocytes from a patient's tumor, growing them in a laboratory, and then reinfusing them back into the patient's body. TIL therapies aim to harness the patient's own immune system to target and destroy melanoma cells. The infused TILs have been specifically selected and expanded to recognize and attack tumor cells.

The FDA approval for AMTAGVI is based on results from the Phase 2 C-144-01 trial. In the study, 73 patients with advanced melanoma who were previously treated with anti-PD-1 therapy and targeted therapy, where applicable, received AMTAGVI. For these patients, the average time to response was 1.5 months, the objective response rate (a measurement of complete or partial tumor shrinkage) was 31.5%, with the median duration of response not yet achieved.

How does AMTAGVI treat advanced melanoma?

AMTAGVI works to promote an immune response, with the goals of:

- Controlling melanoma and shrinking tumors anywhere in the body
- Treating symptoms of melanoma
- Helping patients live longer

AMTAGVI works to enhance the body's natural immune response against melanoma cells. The lymphocytes that are extracted from the tumor are typically the ones that have already recognized and targeted the melanoma cells. By expanding and reinfusing these lymphocytes, it is hoped that they will be able to better recognize and attack the cancer cells throughout the body.

How does AMTAGVI compare against existing melanoma therapies?

AMTAGVI is the first individualized Tumor Infiltrating Lymphocyte (TIL) T cell immunotherapy to earn FDA approval for any cancer. It is approved in the second-line setting. This means, that to be eligible for AMTAGVI, patients must have progressed while being treated with PD-1 based immunotherapy and BRAF/MEK targeted therapy if their melanoma is BRAF mutant.

Who is eligible to receive AMTAGVI?

The U.S. Food and Drug Administration (FDA) approved the use of AMTAGVI to treat adult patients 18 years of age or older who have unresectable or metastatic melanoma (those with Stage 3 or Stage 4 melanoma whose melanoma hasn't responded – or quit responding – to PD-1 based immunotherapies and BRAF/MEK targeted therapy if their melanoma has the BRAF mutation).

Due to the complex nature of TIL therapy, not all patients are healthy enough to receive it. Talk to your doctor to see if you are a good candidate.

How is AMTAGVI administered?

Patients will be admitted into the hospital prior to receiving AMTAGVI. This is done so that doctors can carefully monitor you for any adverse events that may result from the chemotherapy used to

pre-condition your body before the TIL infusion or the interleukin-2 (aldesleukin) given after. AMTAGVI is offered only at Authorized Treatment Centers.

Here's how AMTAGVI is given:

- Tumor Tissue Collection: The first step is the surgical removal of a tumor from the patient. This tumor tissue contains immune cells called lymphocytes, including T cells, that have infiltrated the tumor.

- Manufacturing: The tumor tissue is then shipped to a specialized laboratory where the T cells (called lymphocytes) are isolated from the tumor. These T cells are then grown and expanded a billion-fold. The personalized therapy is then frozen and sent back to the treating hospital. The manufacturing process can take up to three weeks.

- Conditioning: Before the T cells can be infused back into the patient, the patient will undergo a conditioning regimen of chemotherapy. This conditioning helps to suppress the patient's immune system and create space for the infused T cells to expand and function effectively.

- Infusion: The activated and expanded T cells are then infused back into the patient's bloodstream. These T cells can then travel to the tumor site and target melanoma cells.

- Post Infusion: Three to 24 hours after receiving the T cells, patients will receive interleukin-2 (aldesleukin) to stimulate T cell activity.

Once the T cells are infused, they can migrate to tumor sites and infiltrate tumor tissue. These activated T cells were selected because they are able to identify unique characteristics found on the surface of melanoma cells and then initiate an immune response against them. The T cells can directly kill the cancer cells and can help attract other immune cells to the tumor site.

It's important to note that TIL therapy is a complex and personalized treatment approach. The success of TIL therapy depends on various factors, including the quality and quantity of the isolated TILs, the conditioning regimen, and the characteristics of the patient's tumor.

If you or someone you know is considering TIL therapy for melanoma, it is crucial to consult with a

qualified healthcare professional who can provide personalized advice and guidance based on the individual's specific medical condition and circumstances.

What do the experts say about AMTAGVI?

"The establishment of TIL as an effective therapy has required years of research initiated by Dr. Steven Rosenberg (National Cancer Institute) and Dr. Suzanne Topalian (Johns Hopkins Medicine). This treatment has been shown to be effective in patients who have progressed on immunotherapy or targeted therapy. The melanoma physician and research community is thrilled to have this option to provide to our patients." —Charlotte E. Ariyan, MD, PhD, Memorial Sloan Kettering Cancer Center

"Lifileucel is an additional weapon in our armamentarium against metastatic melanoma, particularly for patients who cannot tolerate immune checkpoint inhibitors or whose disease is resistant to immune checkpoint inhibitors. This approval brings us closer to our goal of a cure for all." —Harriet Kluger, MD, Yale School of Medicine

"With this approval patients who have progressed following treatment with existing standard of care therapies have a promising treatment option with this new type of cell-based therapy. This represents another leap forward for the entire melanoma community and will benefit patients across the country and hopefully in the future expand to other types of cancer." —MRA Chief Science Officer Joan Levy, PhD.

"This groundbreaking T-cell immunotherapy represents a significant advancement in our ability to combat melanoma. By deploying patient specific immune cells that recognize and fight cancer, AMTAGVI offers hope to those previously treated with anti-PD-1 antibodies and targeted therapies. It's a remarkable milestone in personalized melanoma treatment." —MRA Chief Executive Officer Marc Hurlbert, PhD.

Do you still have questions about AMTAGVI?

Post your questions to MRA's online discussion community, the Melanoma > Exchange, to discuss AMTAGVI or other treatment options, research advances, and more!

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