

FDA approves Novartis Kymriah® CAR-T cell therapy for adult patients with relapsed or refractory follicular lymphoma

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- 68% of patients receiving Kymriah in the ELARA trial experienced complete response, with an 86% overall response rate, along with a remarkable safety profile¹
- Sustained clinical benefit from Kymriah treatment demonstrated – of patients who achieved a complete response, 85% were still in response at 12 months¹
- Kymriah can be administered in the outpatient setting, offering increased flexibility and potentially reducing the burden of therapy for patients and their care teams^{1,2}
- Kymriah is now FDA approved in three indications and remains the only CAR-T cell therapy approved in both adult and pediatric settings¹

EAST HANOVER, N.J., May 27, 2022 /PRNewswire/ -- Novartis today announced the US Food and Drug Administration (FDA) has granted accelerated approval for Kymriah® (tisagenlecleucel) for the treatment of adult patients with relapsed or refractory (r/r) follicular lymphoma (FL) after two or more lines of systemic therapy. In accordance with the Accelerated Approval Program, continued approval for this indication may be contingent upon verification and description of clinical benefit in confirmatory trial(s). Kymriah is now FDA approved in three indications and remains the only CAR-T cell therapy approved in both adult and pediatric settings¹.

"We are proud of today's FDA approval of a third indication for Kymriah. We hope this treatment option that has the potential for long-lasting results may help break the unrelenting cycle of treatment for patients with follicular lymphoma," said Victor Bulto, President, Novartis Innovative Medicines US. "We are on a mission to build on our pioneering work in cell therapy and continue to innovate for patient impact."

The approval is based on data from the Phase II ELARA trial, a single-arm, open-label trial, in which 90 patients were evaluated for efficacy with a median follow-up of approximately 17 months. Eighty-six percent of patients treated with Kymriah achieved a response including 68% who experienced a complete response¹.

Prolonged durable response to treatment was demonstrated with an estimated 85% of patients who achieved a complete response still in response 12 months after initial response¹. Kymriah was shown to be effective in high-risk patients including those who were heavily pretreated or had refractory disease, POD24, bulky disease or those with high Follicular Lymphoma International Prognostic Index (FLIPI) scores¹.

For the 97 patients evaluable for safety at 21 months of median follow-up, the safety profile of Kymriah was remarkable¹. Fifty-three percent of patients experienced any-grade cytokine release syndrome (CRS), as defined by the Lee scale, and there were no reported cases of high-grade (grade 3 or higher) CRS¹. Forty-three percent of patients experienced any-grade neurologic events; grade 3 or higher neurologic events were seen in only 6% of patients¹. Eighteen percent of patients (17 of 97 patients) were infused in an outpatient setting³.

"Patients with follicular lymphoma who relapse or don't respond to treatment have a poor prognosis and may face a series of treatment options without a meaningful, lasting response," said Stephen J. Schuster, MD, the Robert and Margarita Louis-Dreyfus Professor in Chronic Lymphocytic Leukemia and Lymphoma in the Division of Hematology Oncology and Director, Lymphoma Program and Translational Research at the University of Pennsylvania's Abramson Cancer Center, institutional Principal Investigator on the trial. "This new, effective option for patients with follicular lymphoma may offer long-term benefit."

While follicular lymphoma is typically an indolent type of cancer, patients with FL may be exposed to a median of four lines of treatment, with an upper range of 13 lines^{4,5}. Although there are multiple systemic therapies available, the efficacy of these regimens drops off rapidly in later lines⁶.

"The approval of Kymriah offers patients with relapsed or refractory follicular lymphoma a new treatment option and new hope for improving patient outcomes," said Meghan Gutierrez, Chief Executive Officer at the Lymphoma Research Foundation. "Having this single infusion treatment option helps to transform the way healthcare providers approach this type of blood cancer and we commend those who have contributed to the acceleration of scientific research for the benefit of patients."

In early May 2022, the European Commission approved Kymriah for the treatment of adult patients with r/r FL after two or more lines of systemic therapy, the third indication for which Kymriah is available to patients in the European Union.

Additional efficacy and safety details for Kymriah and full Prescribing Information can be found at <https://www.novartis.us/sites/www.novartis.us/files/kymriah.pdf>.

About Novartis commitment to Oncology Cell Therapy

As part of the unique Novartis Oncology strategy to pursue four cancer treatment platforms – radioligand therapy, targeted therapy, immunotherapy and cell and gene therapy – we strive for cures through cell therapies in order to enable more patients to live cancer-free. We will continue to pioneer the science and invest in our manufacturing and supply chain process to further advance transformative innovation.

Novartis was the first pharmaceutical company to significantly invest in pioneering CAR-T research and initiate global CAR-T trials. Kymriah, the first approved CAR-T cell therapy, developed in collaboration with the Perelman School of Medicine at the University of Pennsylvania, is the foundation of the Novartis commitment to CAR-T cell therapy.

We have made strong progress in broadening our delivery of Kymriah, which is currently available for use in at least one indication in 30 countries and at more than 370 certified treatment centers, with clinical and real-world experience from administration to more than 6,900 patients. We continue to pioneer in cell therapy, leveraging our vast experience to develop next-generation CAR-T cell therapies. These therapies will utilize our new T-Charge™ platform being evaluated to expand across hematological malignancies and bring the hope for a cure to patients with other cancer types.

Novartis has a comprehensive, integrated global CAR-T manufacturing footprint that strengthens the flexibility, resilience and sustainability of the Novartis manufacturing and supply chain.

Important Safety Information

KYMRIAH may cause side effects that are severe or life-threatening, such as cytokine release syndrome (CRS) or neurological toxicities. Patients with CRS may experience symptoms including difficulty breathing, fever (100.4 °F/38 °C or higher), chills/shaking chills, severe nausea, vomiting and diarrhea, severe muscle or joint pain, very low blood pressure, or dizziness/lightheadedness. Patients may be admitted to the hospital for CRS and treated with other medications.

Patients with neurological toxicities may experience symptoms such as altered or decreased consciousness, headaches, delirium, confusion, agitation, anxiety, seizures, difficulty speaking and understanding, or loss of balance. Patients should be advised to call their health care provider or get emergency help right away if they experience any of these signs and symptoms of CRS or neurological toxicities.

Because of the risk of CRS and neurological toxicities, KYMRIAH is only available through a restricted program under a Risk Evaluation and Mitigation Strategy (REMS) called the KYMRIAH REMS.

Patients may experience hemophagocytic lymphohistiocytosis/macrophagocytic activation syndrome. Patients should discuss the possibility of developing this life-threatening condition with their health care provider.

Serious allergic reactions, including anaphylaxis, may occur after KYMRIAH infusion. KYMRIAH can increase the risk of life-threatening infections that may lead to death. Patients should be advised to tell their health care provider right away if they develop fever, chills, or any signs or symptoms of an infection.

Patients may experience prolonged low blood cell counts (cytopenias), where 1 or more types of blood cells (red blood cells, white blood cells, or platelets) are decreased. The patient's health care provider will do blood tests to check all their blood cell counts after treatment with KYMRIAH. Patients should be advised to tell their health care provider right away if they get a fever, are feeling tired, weak, or short of breath, or have bruising or bleeding.

Patients may experience hypogammaglobulinemia, a condition in which the level of immunoglobulins (antibodies) in the blood is low and the risk of infection is increased. It is expected that patients may develop hypogammaglobulinemia with KYMRIAH and may need to receive immunoglobulin replacement for an indefinite amount of time following treatment with KYMRIAH. Patients should tell their health care provider about their treatment with KYMRIAH before receiving a live vaccine.

After treatment with KYMRIAH, patients will be monitored lifelong by their health care provider, as they may develop secondary cancers or recurrence of their cancer.

Patients should not drive, operate heavy machinery, or do other dangerous activities for 8 weeks after receiving KYMRIAH because the treatment can cause temporary memory and coordination problems, including sleepiness, confusion, weakness, dizziness, and seizures.

Some of the most common side effects of KYMRIAH are difficulty breathing, fever (100.4 °F/38 °C or higher), chills/shaking chills, confusion, severe nausea, vomiting and diarrhea, severe muscle or joint pain, very low blood pressure, dizziness/lightheadedness, and headache. However, these are not all the possible side effects of KYMRIAH. Patients should talk to their health care provider for medical advice about side effects.

Prior to a female patient starting treatment with KYMRIAH, their health care provider may do a pregnancy test. No information is available for KYMRIAH use in pregnant or breastfeeding women. Therefore, KYMRIAH is not recommended for women who are pregnant or breastfeeding. Patients should talk to their health care provider about birth control and pregnancy.

Patients should tell their health care provider about all the medicines they take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

After receiving KYMRIAH, patients should be advised that some commercial HIV tests may cause a false-positive test result. Patients should also be advised not to donate blood, organs, tissues, sperm, oocytes, and other cells after receiving KYMRIAH.

Please see the full Prescribing Information for KYMRIAH, including Boxed WARNING, and Medication Guide at www.KYMRIAH.com

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About Novartis

Located in East Hanover, NJ Novartis Pharmaceuticals Corporation – an affiliate of Novartis – is reimagining medicine to improve and extend people's lives. As a leading global medicines company, we use innovative science and digital technologies to create transformative treatments in areas of great medical need. In our quest to find new medicines, we consistently rank among the world's top companies investing in research and development. Novartis employs nearly 15,000 people in the United States. For more information, please visit <https://www.novartis.us>.

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