MEDSIR
MEDICA SCIENTIA INNOVATION RESEARCH

Lay Language Summary

TUXEDO-3

Patritumab deruxtecan (HER3-DXd) in active brain metastases (BMs) from metastatic breast (mBC) and non-small cell lung cancers (aNSCLC), and leptomeningeal disease (LMD) from advanced solid tumors: results from the TUXEDO-3 phase II trial

IMPORTANT:

- The document contains the summary of a clinical trial, and its sole purpose is to communicate the results of it to the general public.

- This document is not intended to promote recruitment or provide medical advice.

- The results reflected in this document may contradict those of other trials.

- It is not recommended to make decisions based on the information collected in this document; it should always be consulted with a medical professional beforehand.

ABOUT THIS SUMMARY

SPONSOR: MEDICA SCIENTIA INNOVATION RESEARCH S.L.

CANCER TYPE: Cohort 1: Metastatic breast cancer with brain metastases.
Cohort 2: Advanced non-small cell lung cancer with brain metastases.
Cohort 3: Metastatic solid tumors with leptomeningenial disease.

PHASE: PHASE II

DATES OF STUDY: 2023 - Ongoing

TITLE OF THIS STUDY: Patritumab deruxtecan (HER3-DXd) in active brain metastases (BMs) from metastatic breast (mBC) and non–small cell lung cancers (aNSCLC), and leptomeningeal disease (LMD) from advanced solid tumors: results from the TUXEDO-3 phase II trial

PATIENTS NUMBER: 63

PHARMACEUTICAL PARTNER: Daiichi-Sankyo and MSD

DATE OF THIS REPORT: May 5th, 2025

CLINICAL TRIALS.GOV: NCT05865990

The content for this document was finalized by **Medica Scientia Innovation Research (MEDSIR)** on May 5th, 2025. The information in this summary does not include additional information available after this date.

What was the purpose of this study?

Cancer is a disease in which normal cells grow and divide uncontrollably. When cancer cells leave their original site and invade other areas of the body to form new tumors, we say that the cancer produce metastasis. Metastatic breast cancer and advanced (or metastatic) non-small cell lung cancer (aNSCLC), the most common type of lung cancer, are the main causes of brain metastasis (BMs). In addition, cancer cells can spread to the leptomeninges, thin tissue layers that cover the brain and spinal cord, to produce leptomeningeal metastases or leptomeningeal disease (LMD). LMD can occur in any cancer produced in the bones, tissues, or organs, which are known as 'solid tumors'.

To protect our brain from dangerous subtances and avoid damage, there is a locked layer of cells called 'blood-brain barrier'. However, this set of cells is impenetrable for most drugs, so patients with BMs and/or LMD have not only por outcomes, but also very limited therapeutic options. In last years, a group of treatments have shown promising results in these patients: the 'antibody-drug conjugates' (ADCs). An ADC is a human-made therapy consisting of a protein that specifically binds to protein receptors on the surface of cancer cells, plus a drug that is then taken into the malignant cells to destroy them. Since cancer cells from BMs have protein receptors called 'Human epidermal growth factor receptor 3' (HER3), one possibility for these patients could be patritumab deruxtecan (HER3-DXd), and ADC made up of patritumab, a protein that binds HER3 in cancer cells, and deruxtecan, a drug that kill cancer cells by damaging DNA and blocking their proliferation

What did researchers want to find out?

TUXEDO-3 was created to know if HER3-DXd could work in patients with breast or lung cancers and BMs, and patients with solid tumors and LMD. The main objectives were to calculate the number of patients with clinical response inside the brain in patients with breast and lung cancers and BMs, and the number of patients alive after 3 months of starting the treatment in patientis with solid tumors and LMD. Key secondary objectives included the evaluation of side effects and different tests to measure brain-related problems, brain capacity, and patients' daily life during the treatment period. It was stablished that the results would be considered positive if there were ⩾15% patients with clinical responses inside the brain in patients with breast or lung cancer with BMs, and ⩾15% patients alive after 3 months in those patients with solid tumors and LMD.

When and where did the studies take place?

The recruitment of patients was carried out between December 12, 2023 and September 6, 2024 and took place in Austria and Spain.

Who took part of this study?

Patients were divided into those with [1] metastatic breast cancer and BMs (21 patients), [2] aNSCLC and BMs (20 patients), and [3] LMD from solid tumors (22 patients). All participants received intravenous HER-DXd once every 21 days until worsening, high toxicity, or withdrawal for any other reason.

What were the results of the study?

The main objectives were reached, since 23.8% and 30.0% patients achieved clinical responses inside the brain in groups [1] and [2], respectively, and 65% patients were alive after 3 months in group [3]. Side effects were consistent with previous studies using HER3-DXd, with serious effects rarely occurring in more than 5% of patients. Tests evaluating brain-related problems, brain capacity, and patients' daily life during the treatment period showed that patients remained during the follow-up stable or even improved in certain cases.

What were the main medical conclusions?

TUXEDO-3 is the first medical study evaluating the response and toxicity of HER3-DXd over time in patients with pretreated metastatic breast cancer and aNSCLC with BMs, and LMD from solid tumors. The positive results could streamline the introduction of HER3-DXd as a new treatment option for these patients.

Where I can find more information?

Your doctor can help you understand more about this study and the results. Speak to your doctor about the treatment options available in your country. You should not make changes to your care based on the results of this or any single study. Keep taking your current treatment unless instructed by your doctor.

For more details, please visit:
https://www.medsir.org/clinical-trials/tuxedo-3
The full scientific report of this study is available online at:
https://clinicaltrials.gov/

Thank you who took part in the study

If you took part in this study, **Medica Scientia Innovation Research (MEDSIR)**, as the Sponsor, extends its gratitude for your participation. This overview will outline the findings of the study. If you have any queries regarding the study or its outcomes, please reach out to the doctor or staff at your study location.

ABOUT MEDSIR
Founded in 2012, MEDSIR works closely with its partners to drive innovation in oncology research. Based in Spain and the United States, the company manages all aspects of clinical trials, from study design to publication, utilizing a global network of experts and integrated technology to streamline the process. The company offers proof-of-concept support and a strategic approach that helps research partners experience the best of both worlds from industry-based clinical research and investigator-driven trials. To promote independent cancer research worldwide, MEDSIR has a strategic alliance with Oncoclínicas, the leading oncology group in Brazil with the greatest research potential in South America. Learn how MEDSIR brings ideas to life: www.medsir.org