Therapeutic option for tumor patients with the rare DNAJB1-PRKACA gene fusion

A phase I clinical trial is now starting at Tuebingen University Hospital in the Clinical Collaboration Unit (CCU) Translational Immunology, in collaboration with the Department of Internal Medicine I, which is investigating the therapeutic cancer peptide vaccine Fusion-VAC-XS15 in combination with immune checkpoint blockade by atezolizumab (Tecentriq®). The combination therapy is supposed to be used for advanced fibrolamellar hepatocellular carcinoma (FL-HCC) and other tumor diseases with evidence of the DNAJB1-PRKACA fusion transcript.

FL-HCC is a tumor disease that typically affects young people without a history of liver disease. In recent years, these tumors have increased in frequency. For advanced FL-HCC, there is currently no accepted standard of care. Other tumor disorders, like as malignant neoplasms of the pancreatic or bile ducts, that show signs of the DNAJB1-PRKACA fusion transcript similarly have very few treatment choices.

The Tuebingen researchers are currently looking into the viability of using a so-called peptide immunization to treat this malignant illness. A peptide is a short protein. These proteins give the immune system the ability to identify and destroy "foreign" cells. The drug peptide laboratory of the GMP unit of the University Hospital Tuebingen manufactures the peptide vaccine, which is made up of a protein with the fusion region. The DNAJB1-PRKACA fusion peptide was produced in the department of Prof. Dr. Juliane Walz. "In our initial preclinical and clinical studies, we have been able to activate strong immune responses against the DNAJB1-PRKACA fusion peptide and have also already seen the first positive results in patients," she says. The doctors do not expect any serious side effects from the peptide vaccine, since the vaccine is specifically "tailored" for the gene fusion-bearing tumor cells.

In the study, the immune checkpoint inhibitor atezolizumab is given along with the vaccine. Drugs called immune checkpoint inhibitors stimulate the immune system to fight cancer cells. Hepatocellular carcinoma, a different type of liver cell cancer, can already be treated with atezolizumab. The clinical trial is being led by Prof. Dr. Michael Bitzer and Prof. Dr. Helmut Salih. "By combining the peptide vaccine and immune checkpoint inhibitor, we hope to achieve an even better effect of the tumor vaccination," says Prof. Dr. Bitzer.

Criteria for study participation

Participation is open to adult patients with locally advanced or metastatic FL-HCC or another malignant locally advanced or metastatic tumor condition that exhibits DNAJB1-PRKACA gene fusion and is not treatable with a recognized conventional therapy.

Participants are required to visit the Tuebingen study center once prior to beginning treatment. Blood will be drawn at the preliminary examination, and research participation eligibility will be determined. The fusion VAC-XS15 peptide vaccine will be administered to research participants at least twice during the course of the investigation. Every four weeks, atezolizumab will be given intravenously as an infusion. The course of treatment is set over one year.

The study is being conducted by the network of Centers for Personalized Medicine (ZPM) at the University Hospitals of Freiburg, Heidelberg, Tuebingen and Ulm in Baden-Württemberg. The study will start in Tuebingen. The study is financed by the Medical Faculty of Tuebingen and ForTra gGmbH for Research Transfer of the Else Kröner-Fresenius Foundation. The checkpoint inhibitor atezolizumab is provided by Roche Pharma AG.

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Further information

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