



Skin Cancer Therapy: Medical University of Graz coordinates EU-project „IMMOMECE“ searching for new ways to treat Merkel cell carcinoma

To find new methods of treatment for a certain type of skin cancer – the so-called Merkel cell carcinoma – is the aim of IMMOMECE (IMmune MODulating strategies for treatment of MERkel cell Carcinoma). This research project, funded by the European Commission with a total budget of € 7.4 million, places emphasis on the development of a special immunotherapy for this highly malignant tumor. The Department of Dermatology and Venerology of the Medical University of Graz coordinates this major project and the financial share for Graz amounts to € 1.2 million over a period of four years.

The Merkel cell carcinoma is a very aggressive skin cancer. With an observed frequency of 0.44 incident cases per 100,000 inhabitants and year it occurs quite seldom, having nonetheless alarmingly increased in incidence over the past 10 years. Mostly, elderly people are affected – the average age of onset of the disease is over 70. However, more and younger people are diagnosed with this cancer. As it goes along with a high mortality rate, the Merkel cell carcinoma is considered one of the most fatal forms of skin cancer. Indeed, up to now it is impossible to cure patients with distant metastases (metastases not located close to the primary tumor) with the help of presently available therapies. And this is exactly the point from which the EU-project IMMOMECE starts its research work - trying to find an innovative therapy for this cancer.

Search for new Merkel cell carcinoma treatment methods

„We try to find a new and effective immunotherapy for the Merkel cell carcinoma. Our approach is based on the specific enrichment of the immunostimulatory T-cell growth factor interleukin-2 in the tumor tissue. For this purpose we use an antibody which recognizes the blood vessels of the tumor and docks there straight away. So interleukin-2 interlinks with the antibody and takes full effect directly at the tumor, fighting it this way”, says project coordinator Jürgen C. Becker.

It is a fact that patients developing a Merkel cell carcinoma quite often suffer from an immune system deficiency, which might be the result of organ transplantations or disorders of the hematopoietic system. An immunotherapy influences the immune system of humans – in the present case with interleukin-2. This growth factor is produced by the immune system itself and strengthens the body’s immune responses, especially those of specific killer cells, the so-called T cells. These specific responses play an important role in tumor defense. Treatment of the malignant melanoma with conventional interleukin-2, for example, is registered in the USA but carried out only in a few centers worldwide, because a very high dosage of interleukin-2 has to be administered since this is the only way to achieve the necessary concentration of the growth factor at the tumor, which is needed for the immunostimulatory effect.

IMMOMECE goes a different way. Low-dose interleukin-2 can be administered as it enriches directly in the tumor via the antibody-binding site. Patients tolerate this form of therapy much better. But the EU-project not only examines the clinical success of a targeted interleukin-2 therapy in patients with a progressed Merkel cell carcinoma. It also characterizes the spontaneous and therapy-strengthened immune responses. In this way, the Merkel cell carcinoma serves as “model” for other solid tumor types and allows conclusions to be drawn as to the relevance of immunotherapy for cancer in general. So the aim is to establish predictive and prognostic biomarkers for individualized immunotherapy.

Nine partners from seven countries

An international consortium of seven countries (Austria, Denmark, Germany, England, France, Italy and Spain) works on this project. Prof. Jürgen C. Becker, Head of the Division of General Dermatology at the Medical University of Graz, coordinates the team of high-ranking researchers

Facts & Figures

- Aim: **Search for new Merkel-Cell-Carcinoma treatment methods**
- Funded by the Seventh EU Framework Program
- Total project volume: 7.4 million Euro
- Financial share for Graz: 1.2 million Euro
- Project period: 4 years
- Project partners: 7 academic institutions and 2 industrial partners from 7 countries
- Project coordination: Med Uni Graz

- <http://www.immomec.eu/>

Further information

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Jürgen C. Becker, coordinator of the EU-project IMMOMEC

