

## **ADOPTIVE REGULATORY CELL THERAPY IN MULTIPLE SCLEROSIS:TWO CASE REPORTS**

**R. Wank**, B. Laumbacher, S. Gu, B. Fellerhoff  
*Immunotherapy Research Center, Immunis e.V., Muenchen, Germany*  
[rudolf.wank@muenchen-mail.de](mailto:rudolf.wank@muenchen-mail.de)

**Rationale:** In vitro-stimulated increase of regulatory T cells numbers should neutralize autoaggressive T cells and prevent autoimmune attacks in MS patients

**Patients:** In both MS patients (both relapsing type, patient 1, female, 34y, duration of disease 14y; patient 2, male 32y, duration of disease 4y) diagnoses were verified by MRI Technical procedure (in brief): Mononuclear cells of the peripheral blood (PBMC) were isolated from heparinized blood and stimulated with the monoclonal antibody OKT3, supplemented with interleukine-4, and cryopreserved.

**Therapeutical procedures:** Five, later twenty million Th-2 enriched cells were given usually once weekly intravenously to patient 1 since 10y, to patient 2 since 4y.

**Results and discussion:** Patient 1, received the first years only 5-10 million stimulated PBMC without IL4-polarization. The patient regained energy, lost nervousness, finishes her biology exams and walk again for hours. The first years of therapy, 1-2 relapses/year were treated with cortisone. The last 4 years with twenty million Th2-enriched cells only one relapse in 4 years occurred. No new lesions were discovered since. The patient works full time without problems and without other specific drugs.

Patient 2, a car mechanic, received few days after his first MS attack twenty million Th2 enriched cells once weekly. Extension of the injection frequency to every second, then to every third week caused an increasing spasticity, which disappeared with return to an injection each week. The patients works full time including night shifts without problem, no relapses occurred since 4 years, no other drugs are used.