Macrophage functions after amniotic membrane transplantation in mice with herpes stromal keratitis. D. Bauer[1], S. Wasmuth[1,2], H. Li[1], P. Hermans[1], N. van Rooijen[3], K.P. Steuhl[2], A. Heiligenhaus[1]. [1]Ophtha-Lab, Dept. of Ophthalmology at St. Franziskus Hospital, Muenster, Germany; [2]Department of Ophthalmology, University of Essen. Germany. [3]Department of Cell Biology & Immunology, Vrije University of Amsterdam, The Netherlands.

Purpose: During the development of herpes stromal keratitis (HSK), macrophages enhance T cell-mediated immune response and worsen disease. Rapid improvement of HSK occurs after human amniotic membrane transplantation (AMT). In this study we determined the macrophage functions after AMT. **Methods**: The right corneas of BALB/c mice were infected with 10^5 PFU of HSV-1 (KOS strain). Animals were chosen for AMT or tarsorrhaphy that had developed ulcerating HSK on day 14 after infection. Macrophages were depleted from the eyes by corneal or subconjunctival injection of Cl_2MDP-liposomes (Cl_2MDP-LIP) prior to AMT; mice in the control group received PBS-liposomes (PBS-LIP). Two days after AMT, the amniotic membranes were removed. Inflammatory cell infiltration in the cornea was studied by histology and by electron microscopy. **Results**: Improvement of corneal ulceration and reduction of PMN infiltration was detected in the AMT group compared to the tarsorrhaphy group. After additional injection of Cl_2MDP-LIP in the AMT group, inflammatory cells accumulated in the cornea compared to PBS-LIP treated group. This correlated with an increased amount of cell debris and non-viable PMNs. **Conclusion**: The findings suggest that macrophages infiltrating the cornea after AMT in mice with severe HSK may primarily have scavenger functions.

CR: None

Supported by DFG (He1877/12-1), and Ernst and Berta Grimmke-Foundation