

P03-18

SIGNIFICANT DECREASES OF CIRCULATING ENDOTHELIAL CELLS BUT NO CHANGES OF ENDOTHELIAL PROGENITOR CELLS OR MESENCHYMAL STEM CELLS DURING ANTIDEPRESSANT TREATMENT

R. Kollmar¹, M. Herrmann², T. Stöckl³, U. Weinzierl¹, S. Schwab¹, J. Kornhuber³, R. Kalb³

¹Neurology, ²Immunology, ³Psychiatry, University Erlangen-Nürnberg, Erlangen, Germany

Objective: We examined leukocyte numbers, circulating endothelial progenitor cells (CD34+, CD133+), circulating mesenchymal stem cells (CD105+) and circulating endothelial cells (CD146+) at the beginning, after 4 weeks and at the end of an inpatient antidepressant treatment.

Methods: 24 insufficiently pretreated inpatients with major depression were included. At admission, after four weeks and at demission blood samples were obtained, and cell numbers were counted by flow cytometric analysis (FACS). At each examination the severity of the depression was evaluated with the Beck Depression Inventory (BDI). We were especially interested in the changes of cell numbers during the antidepressant treatment. The data were statistically analyzed using SPSS 14.0.

Results: The mean BDI score fell from 34 ± 7 at the beginning to 26.5 ± 6.6 after four weeks and 13.5 ± 5.7 at demission. The longer the overall duration of the depressive illness, the higher the number of leukocytes at admission ($P < 0.0001$). The lower the depression score at demission, the lower the final number of leukocytes ($P < 0.001$). During the antidepressant treatment the BDI depression score improved significantly ($P < 0.0001$). The number of CD146+ cells showed a significant decrease ($P < 0.006$). We did not find any significant changes of circulating CD34+, CD105+, or CD133+ cells during the antidepressant treatment.

Conclusions: The leukocyte results suggest an activation of the immune system in major depression and a deactivation due to antidepressant treatment.