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NOVEL EVIDENCE FOR ENHANCED STEM CELL TRAFFICKING IN ANTIPSYCHOTIC-NAÏVE SUBJECTS DURING THEIR FIRST PSYCHOTIC EPISODE

J. Samochowiec[1], J. Kucharska Mazur[1], M.Z. Ratajczak[2]

[1]Psychiatry, Pomeranian Medical University, Szczecin, Poland ; [2]5Stem Cell Biology Program at the James Graham Brown Cancer Center, University of Louisville, Louisville, USA

Aim: in this study, we tested the novel hypothesis that stem cells and those factors that modulate their trafficking may be biological markers for acute psychosis.

Method: Twenty-eight subjects during their first nonaffective psychotic episode were investigated before and after antipsychotic treatment and were compared with 35 healthy controls (CG); the psychotic group (PG) was divided into 'schizophrenic' (SG) and 'non-schizophrenic' (NG) subgroups.

Method: We examined the number of circulating $Lin^{-}/CD45^{-}/CD34^{+}$ and $Lin^{-}/CD45^{-}/CD133^{+}$ very small embryonic-like stem cells (VSELs), which express markers of the neural lineage, and also the plasma levels of factors that modulate their trafficking: the C3a, C5a, and C5b-9 activated complement cascade components, stromal-derived factor 1, and sphingosine-1-phosphate (S1P).

Results: We found that the mean numbers of $Lin^{-}/CD45^{-}/CD34^{+}$ VSELs and the plasma levels of S1P prior to treatment differ between the CG and PG and that these cells express markers of neural lineage. The number of $Lin^{-}/CD45^{-}/CD133^{+}$ VSELs in peripheral blood differed between the SG and NG prior to treatment.

Conclusions we found that C3a and S1P are the best predictors of risk and are potential markers for the first psychotic episode. Furthermore, in the SG, the number of circulating $Lin^{-}/CD45^{-}/CD34^{+}$ VSELs and the S1P plasma level are the best predictors of risk and are proposed as novel markers for the first 'schizophrenic' episode of psychosis.

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