OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Neurology & Therapeutics
September 08-10, 2014 Hilton Philadelphia Airport, USA

MicroRNA in multiple sclerosis: New biomarkers and potential targets for treatment

Konstantin E Balashov and **Latt Latt Aung**
Rutgers-Robert Wood Johnson Medical School, USA

A growing body of scientific evidence indicates that microRNAs (miRNA) are abnormally expressed in patients with multiple sclerosis (MS). B cells are implicated in the pathogenesis of MS. The role of miRNA in MS is not well understood. It was studied if miRNAs regulate pro-inflammatory capabilities of B cells in MS. B cells and monocytes were separated from untreated patients with MS and age- and gender-matched control healthy subjects (CHS). Expression of 904 miRNAs was tested by microarrays followed by validation with real-time qPCR. Expression of miR-320 was significantly decreased in B cells of patients compared to CHS, p=0.014, but not in monocytes. Protein expression of Matrix metallopeptidase 9 (MMP-9), the protein implicated in disruption of blood-brain barrier and is specifically targeted by miR-320, was significantly increased in B cells of patients. To test whether endogenous miRNA-320 inhibits MMP-9 secretion and TFRC expression, B cells from CHS were transfected with specific miR-320 inhibitor which led to increased MMP-9 expression and secretion. In summary, miR-320 expression is selectively decreased in B cells of patients with MS. This is associated with increased expression of miR-320-specific target, MMP-9, which promotes blood-brain barrier disruption. The author will discuss promise and obstacles in using microRNAs as biomarkers of disease activity and potential targets for MS treatment.

Biography

Konstantin E Balashov, MD, PhD, FAAN, is an Associate Professor of Neurology at Rutgers-Robert Wood Johnson Medical School. He is trained in clinical neurology and immunology and actively conducts clinical studies in multiple sclerosis. He has published more than 40 papers in peer-reviewed journals.

kbalashov@yahoo.com

J Neurol Neurophysiol 2014
ISSN: 2155-9562, JNN an open access journal

Neuro-2014
September 08-10, 2014

Volume 5, Issue 5

Page 129