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Poster Presentation

Central Nervous System and Blood Biomarker in Stroke, CNS Bleeding, Epilepsy, and Traumatic CNS Injury; MicroRNAs

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Abstract

A Central nervous system (CNS) hemorrhage is bleeding in or around the brain and spinal cord. Reasons of CNS hemorrhage include high blood pressure, cancers, drug abuse, abnormally weak blood vessels that leakage, and trauma. Regression of CNS bleeding was confirmed to be relatively repetitive in patients with severe FV, FX, FVII and FXIII deficiencies. Generally in CNS hemorrhage, radiological evaluations are necessary, for example a magnetic resonance imaging (MRI) scan or computed tomography (CT) scan. The MRI or CT scan highlight different features and location of CNS bleeding. Several patterns of MicroRNA (miRNA) expression occur in blood and CNS 24 h after CNS hemorrhage, kainite seizures, brain ischemia, and even surgeries. A number of miRNAs were considerably regulated more than 1.5-fold in blood and brain after each CNS damage. Several miRNAs were down regulated or upregulated in both CNS and blood after a given damage; and a few miRNAs, containing mir-155, mir-362- 3p, miR-298, etc, were down regulated or upregulated in both CNS and blood after several variety damages. The 'cell cycle' was among the top-ranked roles for miRNA regulated in both CNS and blood, and for mRNAs and miRNAs that changed in CNS and blood one day after injury. The miRNAs induced in blood related to the 'cell cycle' may relate to the blood inflammatory response and the proliferation of white blood cells (WBCs) to acute CNS injury. Cell cycle re-entry in neurons has been confirmed in a lot of CNS diseases, including stroke, CNS bleeding, epilepsy, and traumatic CNS injury.

Keywords: CNS Hemorrhage, MicroRNAs, Blood

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