Brain Remodeling: Treatment of Stroke with Cell and Pharmacological Therapies

Time : 4:30 – 6:00p.m.
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Venue : Y301, The Hong Kong Polytechnic University
Language : English
Guest : Michael Chopp, PhD
Speaker : Vice Chairman, Department of Neurology, Henry Ford Hospital, Detroit, MI, USA
Scientific Director, Neuroscience Institute, and Zolton J. Kovacs Chair, Neuroscience Research, Henry Ford Health System, Detroit, MI, USA
Distinguished Prof., Department of Physics, Oakland University, Rochester, MI, USA

Abstract

Functional improvement after stroke can be stimulated using both cell-based and pharmacological treatments. These treatments amplify the endogenous restorative processes present in adult brain. I will present preclinical data on the use of both cells and families of drugs administered days and weeks after stroke which enhance neurological recovery from stroke. Mechanisms of action of these restorative treatments will be described. The effects of restorative treatment of stroke on white matter remodeling of the brain and spinal cord will be emphasized. Data demonstrating that cell-based therapies for stroke induce axonal growth and rewiring in both the spinal cord and brain and thereby contribute to functional recovery; will be presented. In addition, the use of MRI to monitor brain plasticity and recovery in animals and humans will be discussed. Restorative therapies targeting the promotion of brain plasticity are promising approaches for clinical application.

Guest Speaker Bio

Professor Chopp received the B.S. degree in Physics (1967) from Brooklyn College, Brooklyn, New York, and the degrees of M.S. (1970) and Ph.D. (1975) in Physics from New York University, New York. He is currently Vice Chairman in the Department of Neurology, Scientific Director of the Neuroscience Institute, Henry Ford Hospital/Henry Ford Health System. He is also a Distinguished Professor in Department of Physics at Oakland University, Rochester, MI. His research has been supported continuously by peer reviewed grants from National Institute of Health (NIH). He has authored over 430 peer reviewed scientific papers and presented 286 invited lectures at international conferences and research institutions. He has supervised over 55 post-doctoral researchers, graduate students and undergraduate assistants. His research interests are broadly based in the areas of neurological disorders and gene therapy. His primary research interests focus on mechanisms and methods to stimulate recovery of function after stroke, traumatic brain injury and neurodegenerative diseases (e.g. MS). He investigates molecular signaling transduction pathways which promote brain plasticity, white matter changes in brain during recovery of function, the interaction of neurogenesis, angiogenesis and neurite outgrowth in stimulating brain remodeling and functional recovery from injury, basic cell and molecular biology of endogenous stem cells within the brain, angiogenesis and arteriogenesis during stroke recovery, the applications of cell-based therapies and pharmacological agents (e.g. HDL, EPO, statins, cGMP) for the restorative treatment of neural injury, and MRI of recovery of function- preclinical and clinical studies. Imaging and image analyses for MRI and 2-Photon in vivo microscopy are also active areas of interest in our laboratory. In addition to his work on neurorestoration, he also has a strong interest in neuroprotection and the interaction of various vascular and neuroprotective agents with thrombolytic therapy. Brain tumor (glioma) research both at the basic and preclinical levels using gene therapies as well as photodynamic therapy; is an active area of research in his laboratory.

All are welcome!

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