TRANSLATIONAL NEUROSCIENCE TRAJECTORY-BIG DATA WITH BENCH EVIDENCE AND CLINICAL OUTCOMES

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A wide-range of existing bench evidence and clinical outcome data has contributed to novel biological patterns and medical decisions in human health, disease and medicine. However, the lack of high-value phenotype vs. genetics interpretation between biological knowledge and clinical outcome still remains.

Purpose: To combine translational neuroscience studies with standardized-structure dataset and to establish significant brain-neuron protective knowledge with early medical intervention.

Method: 314 subjects enrolled in three prospective data sets were used. Clinical data were collected at neuro-trauma acute care units at two level-one trauma and stroke medical centers in the U.S. Inclusion criteria were basic characteristics, vital bedside and laboratory results, and neurological assessment tools (Glasgow Coma Scale, Glasgow Outcome Scale, and Disability Rankin Scale). Clinical diagnosis with cerebral hypoxia/ischemia was based on CT and MRI results. Bench evidence data were neuroglobin protein expression and neuroglobin genetic variation through peripheral blood and cerebro-spinal fluid during the first fourteen days after hospital admission.

Conclusion: Evidence-based medicine and personalized medicine were identified to provide a more effective health intervention approach and outcome prediction. Medical Bioinformatics technologies and main systematic concepts (biological mechanisms, physical condition, and functional outcomes) take into account the needs of the neurological survivors.

Future Direction: Health information technology systems and human genetics explore important advances in both basic science research and clinical care. A successful data analysis, trajectory will benefit robust clinical informatics systems and address the interaction of personalized genetic discoveries.

Biography

Pei-Ying Chuang earned her PhD and Postdoctoral Fellowship from the University of Pittsburgh. as a Research Fellow at the National Institutes of Health, her research contributed to an understanding of the neuroprotective biomarkers, neuro-immune responses and pathophysiological mechanisms in the brain. She has received research funding and recognition in a specific field of neuroscience. Chuang continues to use her experiences and abilities to pursue her research/ academic strategies and explore a translational research from the bench evidence to bedside practice in neurological populations in both the critical care setting and long-term recovery. The Center for Stroke Disparities Solution of the Langone Medical Center at New York University/Columbia University/SUNY (2014) has selected Chuang in 2014 as a cohort-one Stroke Scholar.

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