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Global Congress on
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Haijun Tu

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Identification of protective role of enolase1 in cerebral ischemia-induced neuronal injury and of potential ischemia biomarker by brain slice-based selex

Stroke is one of leading causes of disability and death among adults worldwide and results in numerous biochemical alterations. While the mechanisms underlying neuronal death and dysfunction remain poorly understood, we investigated the differential proteomic profiles of mouse brain homogenate with 3h of Middle Cerebral Artery Occlusion (MCAO) ischemia, or sham, by mass spectrometry. We identified Enolase1 (ENO1), a key glycolytic enzyme, as a potential mediator of neuronal injury in MCAO ischemic model. Immunohistochemical analysis revealed that ENO1 is localized in neuronal cytoplasm and dendrites. Interestingly, the expression level of ENO1 was significantly increased in the early stage, but dramatically decreased in the late stage, of cerebral ischemia *in vivo*, and of cultured hippocampal neurons treated with oxygen/glucose deprivation (OGD) *in vitro*. Strikingly, ENO1 overexpression in cultured neurons alleviated dendritic and spinal loss caused by OGD treatment. The neuronal injury caused by OGD treatment *in vitro* or ischemia *in vivo* was mitigated by the application of PEP. Taken together, these data revealed that ENO1 plays a novel and protective role in cerebral ischemia-induced neuronal injury, highlighting a potential of ENO1 as a therapeutic target of neuronal protection from cerebral ischemia. Moreover, we also utilized frozen brain slices of Middle Cerebral Artery Occlusion (MCAO) in a mouse model of ischemia to select a specific binding aptamer, termed LCW17, by tissue-based SELEX. We identified the binding target of LCW17 as Vigilin. Vigilin is increased in ischemia brain slices and exhibits enhanced release from cultured hippocampal neurons after oxygen glucose deprivation *in vitro*. In summary, Aptamer LCW17 and Vigilin, may potentially be applied to define the molecular mechanism underlying ischemic stroke, as well as its diagnosis.

Biography

Haijun Tu is a Professor, Doctoral tutor and Assistant Dean of neuroscience. He is the director of the National Demonstration International Science and Technology Cooperation Base for Biomedical and Life Analytical Chemistry. He is also the Director of Hunan University and Jinxiang Pharmaceutical Joint R&D Center. He was appointed as a professor of genetics and neuroscience at Hunan University in July 2015, and a doctoral tutor. From January 2011 to June 2015, he successively studied at the French Institute of Health and Medicine (Ecole Normale Supérieure, Paris/INSERM, U1024) and the French National Scientific Research Center/Claude Bernard Lyon First University.

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Ekhlas Al Gamal

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Depression and perceived social support among Saudi patients with multiple sclerosis

Multiple sclerosis is a progressive, neurodegenerative autoimmune disease affecting both the brain and spinal cord. This includes numbness, fatigue, visual disturbances, decreased coordination, spasticity, and bladder and bowel dysfunction, speech and swallowing difficulties, heat sensitivity, cognitive impairment, sexual dysfunction, and physical weakness. The objective of this study was to examine the association between depression level and perceived social support among patients with multiple sclerosis (MS) in Saudi Arabia. A cross-sectional, descriptive, correlational design was used with 140 patients. Self-reporting questionnaires were used. The age range of the participants was 18–59 years (mean 34.3 years, SD 7.69). The mean score for reported depression was 27.5 which is considered as moderate level of depression. The mean score of the Multidimensional Scale of Perceived Social Support (MSPSS) was 45.3 (SD = 16.2). Patients with MS who received higher level of social support exhibits lower level of depression. In conclusion, a side from addressing physiological needs, healthcare providers must ensure that patients with MS receive positive social support to decrease level of depression.

Biography

Ekhlas Al Gamal is an Associate Professor in Psychiatric and Mental Health Nursing at College of Nursing, King Saud Bin Abd Al Aziz University for Health Sciences, KSA. Her research interests include Psychological impacts of patients and caregivers living with chronic illnesses.

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Syed Sayed Ahmed

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Surgical treatment of complex spinal tumors

Objective: Spinal tumors constitute a very small percentage of CNS tumors. For tumors with complex morphology, many surgeons have tried to come up with the most suitable operative approach with mixed results. The objective of this study is to highlight the surgical principles that we have followed in the management of our patients with spinal tumors. Over the years, we have developed various strategies that have enabled us to achieve complete or near complete tumor removal with good functional outcome. This will help others to develop new surgical strategies to make complex spinal tumors more operable and in combination with oncological treatment, achieve complete cure.

Materials and Methods: This is a retrospective analysis on 25 patients with spinal tumors that we have operated from January 2012 till January 2019. All patients underwent microsurgical excision. Image guided spinal instrumentation was carried out in 4 patients.

Results: Postoperatively, most of the patients with extradural tumors made a good clinical recovery while one patient of intramedullary tumor demonstrated no change in his clinical findings. Overall, 17 patients had no complications, while 2 patients had wound dehiscence that was later repaired by secondary closure. One patient had a small asymptomatic tumor recurrence (filum terminale schwannoma) and is under regular follow up.

Keywords: Complex Spinal tumors, microsurgical treatment, modified McCormick scale.

Biography

Syed Sayed Ahmed has passed the FRCS Examination in June 1996. Since then he worked in neurosurgery for National Health services of UK at Western General Hospital, Edinburgh; Radcliff infirmary: University of oxford and Walsgrave Hospital, University of Warwick, UK. In 2003 he returned to Bangladesh to join Apollo Hospital Dhaka as Consultant Neurosurgeon . In 2007 he Joined United Hospital Dhaka as Consultant Neurosurgery and Director, Neuro Centre. During his service in UK (Approx. 12 years) he successfully completed different training course in Edinburgh and Oxford. Among these GDC Training course for coiling of cerebral aneurysm organized by University of Oxford in remarkable. His special interest is in Treatment of subarachnoid haemorrhage.

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