

3rd International Conference and Exhibition on Clinical & Cellular Immunology

September 29-October 01, 2014 DoubleTree by Hilton Baltimore-BWI Airport, USA

The effect of NR2B-containing NMDA receptor antagonist on neurological damage and calpain and caspase3 activities in experimental model of multiple sclerosis

Mojtaba Farjam

Fasa University of Medical Sciences, Iran

Teurodegeneration is the pathophysiological basis for permanent neurological disabilities in multiple sclerosis (MS); thus neuroprotection is emerging as a therapeutic approach in MS research. Modulation of excitotoxicity by inhibition of NMDARs has been suggested for neuroprotection. Decrease in Calcium-dependent protease activity secondary to NMDAR inhibition, has been postulated as a mechanism for this approach. However, this probable mechanism remains to be proven yet. Moreover, selective antagonisation of NR2B subtype of these receptors, an NMDAR subtype believed to play a more pivotal role in neurodegeneration, has not been studied too. In this study, the effect of inhibition of NR2B-containing NMDAR was evaluated on the animal model of MS, experimental autoimmune encephalomyelitis (EAE). EAE induction was done using MOG in C57/Bl6 mice. Therapeutic administration of different doses of highly selective NR2B-containing NMDAR inhibitor (RO25-6981) was compared with memantine (non-selective NMDAR antagonist) and vehicle in different experimental groups. Behavioral, histological and western blot analysis of Calpain and Caspase 3-dependent α-spectrin break down were studied comparatively among groups. Neurological deficits in EAE animals were more efficiently decreased by selective inhibition of NR2B-containing NMDARs. Histological studies of the spinal cords also showed decreased inflammation, myelin degradation, neuro-axonal degeneration and Calpain activity when RO25-6981was administered with higher doses. Regarding the role of NR2B-containing NMDARs in excitotoxicity, selective inhibition of these receptor subtypes appears to modulate the neurological disabilities and pathological changes in EAE. Decreasing the activity of Calcium-dependent protease, Calpain, by blockade of NR2B-containing NMDAR using high dose of RO25-6981 can be seen simultaneously. More experimental studies could be performed to suggest NR2B-containing NMDAR inhibition as a potentially effective treatment strategy for slowing down the clinical deterioration of disability in MS.

Biography

Mojtaba Farjam graduated in Medicine in 2001 and received a PhD degree in Medical Pharmacology from Shiraz University of Medical Sciences, Iran in 2012. He studied neuroimmune pharmacology of multiple sclerosis as a Research Scholar in Thomas Jefferson Medical College PA, USA in 2012. Currently, he is the Scientific Executive of Fasa Cohort Study Center, Fasa, Iran and Assistant Professor of Medical Pharmacology in Fasa University of Medical Sciences. He has been working in Fars MS Aid Charity as advisor and supervisor of the data base in this organization since 2010.

mfarjam@sums.ac.ir

Oral and dental health status in preschool children with asthma

Sara Ehsani

Tehran University of Medical Sciences, Iran

A sthma is a chronic inflammatory disorder of the airways, which is diagnosed by periodic symptoms of inflammation, bronchial spasm, and increased mucosal secretions. It has higher incidence among the preschool children. There are many contradictory reports based on the effect of asthma on oral health, however it has been hypothesized that asthma could lead to poor oral health. The objective of the present study was to investigate oral health indices in 44 preschool children of three to six years old with mild to moderate asthma and 46 matched healthy children in Tehran Children's Respiratory Center. Dental plaque, gingival inflammation, mouth breathing, and dental caries were evaluated by one trained examiner according to World Health Organization [WHO] criteria. Culture and colony counting of streptococcus mutants and Lactobacillus species were carried out in saliva specimens of the patients. The effects of different factors on the colony counts were statistically analyzed using linear regression analysis. The level of mother's education and preexisting asthma disease in children had significant effect on the colony counts of streptococcus species whereas no factor was found to influence the number of Lactobacillus counts significantly. The results indicated no significant difference between the children with asthma and those without asthma regarding dmft (decayed, missing, filled, teeth) index (mean of 3.34 in asthmatic children and 3.0 in the control group). Therefore, it can be deduced that the presence of asthma disease did not increase the probability of tooth decay.

sara_ds4@yahoo.com