

## عنوان مقاله:

Regulatory effect of GABA Receptors on laterodorsal thalamic nuclei activity and Spike-Wave Discharges in animal model Of absence epilepsy WAG/Rij Rats

## محل انتشار:

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## خلاصه مقاله:

**Background and Aim :** Childhood Absence Epilepsy is an idiopathic generalized epilepsy. Generally, it's associated with the loss of consciousness and arrest behavior in child. This condition often improves with age. The researchers found that teens who have experienced these attacks in childhood, suffering from psychosocial problems in adulthood. Both human and experimental evidence forcefully defends the view of brain region-specific changes in phasic and tonic GABA inhibition in typical absence seizures. This study focuses on the developmental changes of GABA receptors expression and distributions in the laterodorsal nucleus of thalamus and somatosensory cortex in animal model of absence epilepsy. **Methods :** Experimental groups were divided into four groups of six rats of both WAG/Rij and Wistar strains with 2 and 6 months of age. GABA expression levels of different genes that are involved in the creation of the disease, and distribution of these receptor in the somatosensory cortex and the laterodorsal nucleus of the thalamus were evaluated. Furthermore, neuronal activity changes in the laterodorsal nucleus of the thalamus and somatosensory cortex were monitored with a single unit recording and ECoG technique, simultaneously. **Results :** Results: data showed gene expression levels of G-aGama2 in the laterodorsal thalamus in four groups were not significantly different. G-aGama2 in six months WAG / Rij was much higher than other groups. The expression of all genes in somatosensory cortex into two groups of two and six months WAG/Rij is significantly less than six and two months' old wistar groups. Receptor distribution G-aGama2 and in the cortex of six months WAG / Rij to be considerably less than in groups of two and six months old wistar, but there is not any different with two months WAG/Rij. Explosive discharge of laterodorsal nucleus neurons with correlated SWDs in the cortex, show activity which precedes the spike component of the SWDs. microiontophoretic application of the GABAA and GABAB receptor antagonist (respectively bicuculline and CGP 35348) in the LDN due to both an increased neuronal activity in the laterodorsal nucleus neurons. **Conclusion :** Changes in the characteristic of the GABA receptors alter the .thalamocortical network features and then causes SWDs

## کلمات کلیدی:

ansence epilepsy, GABA receptors, thalamus

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