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Localization of connexin 36 and calcitonin gene related peptide as a determinant of neuropathic pain in the trigeminal ganglion

Mahalakshmi K, P K Sankaran and G Karthikeyan
Saveetha Medical College and Hospital, India

Introduction: The trigeminal ganglion consists of pseudo-unipolar neurons surrounded by satellite glial cells and processes innervating craniofacial region. The gap junctions are trans-membrane proteins formed between the cell membranes of adjacent cells and calcitonin gene related peptide are neuropeptides secreted by sensory neurons.

Materials & Methods: In present study the immune-histochemical localization for connexin 36 gap junctions and CGRP was done in the trigeminal ganglion of male Wistar rats. Localization was done in six rats in each group after standardization of dilution ratio for each antibody.

Result: The result showed connexin 36 was present between the satellite glial cells and between satellite glial cell and neuron. The localization was also found in the Schwann cells surrounding axon. CGRP was localized densely in the cytoplasm of small neurons. The large neurons showed fine less densely stained localization in the cytoplasm.

Conclusion: The excited neuron can influence the surrounding satellite glial cells and neurons through gap junctions and by paracrine actions altering its environment leading to pathological role in inducing painful conditions like migraine. By blocking this gap junction and neuropeptide using antagonist, migraine can be managed.

Biography

Mahalakshmi K is currently pursuing her MBBS from Saveetha Medical College, SIMATS under the mentorship of Dr. Sankaran, Department of Anatomy, SIMATS in India. Her research is on the localization connexin 36 and calcitonin gene related peptide as a determinant of neuropathic pain in the trigeminal ganglion.

k.mahalash.magu2000@gmail.com

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