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Localization of glial fibrillary acidic protein in rat migraine model Wistar rats

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Purpose: 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. Glial cells which surround the pseudo unipolar neurons directly modulate neuronal function and activity by changing the ionic concentrations in and around the neurons.

Methodology: The rats were divided into two groups: Group-1 (n=6): control rats, Group-2 (n=6): Nitroglycerine treated rats 6 mg/kg. Then immune-histochemical localization of glial fibrillary acidic protein in trigeminal ganglion was done in both groups after standardizing dilution ratio.

Findings & Conclusion: GFAP was present in satellite glial cells surrounding the neuron and in the nerve fibers in control rats. In migraine model rats there was increased intensity of GFAP in the satellite glial cells and nerve fibers indicating its role in allodynia. Up-regulation of GFAP in painful conditions like migraine and neuralgic conditions may be an important factor in activating surrounding neurons by releasing interleukins and TNF from the satellite glial cells. The antagonist to GFAP can block the inflammatory cascade and can be used in the treatment of migraine.

Biography

Bryan Joel Devaraj is currently pursuing his MBBS from Saveetha Medical College, SIMATS. His area of research is drug development under the mentorship of Dr. Sankaran, Department of Anatomy, SIMATS in India.

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