Oral Presentation V

Chairman: Ho-Young Choi (Kyung-Hee University) 13:30-14:30 Auditorium

♦023

Distribution of Ion Channels in Trigeminal Ganglion Neurons of Rat.

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Trigeminal nerve functions movement and sensation on orofacial region. Therefore, it is very important in dental clinic. Neurons with their cell bodies in trigeminal ganglion of trigeminal nerve root are primary sensory neurons and play a role of tactile sense, pressure, vibration and pain of orofacial area. Transmission of these senses depends on ion channels, we know that trigeminal ganglion neuron exists many kind of ion channels. Methods of definition on ion channel are several, but in this study we use immunostaining for detection of ion channels.

Method

Immunocytochemistry

① Dissection of neuron in trigeminal ganglion.

Anesthesize the rat, dissection of trigeminal ganglion

② Immunostaining

Set the trigeminal ganglion on the slide glass and fix it with 4% paraformaldehyde for 10 minutes.

Treat with blocking solution.

Put it in the primary antibody overnight, and secondary antibody for 2 hours.

Immunohistochemistry : Dissection of trigeminal ganglion, making section and immunostaining

Immunoperoxidase staining : Interaction between avidin-biotin peroxidase complex and primary antibody of ion channel.

Results In this study we identify several ion channel using immunostaining that previously examined by detection of ion channel currents in trigeminal ganglion neurons in rat. It consists of sodium channel, calcium channel(N, P, Q) and potassium channel(BKCa, Kv4.2, Kir 2.1). All of the ion channels are diverse on density of staining due to cell.

♦024

Biocompatibility of two newly-developed resin-based root canal sealers

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The purpose of this study was to compare the biocompatibility of AH 26, AH Plus, Pulp Canal Sealer, Adseal-1 and Adseal-2 (newly developed resin-based sealers) using subcutaneous implantation test. 64 Sprague-Dawley rats were used. Three rats were used for each sealer for every experimental period (1, 2, 4, 12 weeks). The teflon tubes (5mm length, 1.5mm diameter) were washed with ethanol and distilled water and autoclaved. After anethesia four subcutaneous pockets (depth > 10mm) were prepared in each animal. Each tube containing freshly mixed sealer was inserted into each pocket. Empty teflon tubes were used as controls. After sacrifice the tube with the surrounding tissue was removed. After tissue processing for H-E staining, inflammations were graded as mild (1), moderate (2), and severe (3) according to Orstavik method. Data were statistically analyzed with the Kruskall-Wallis test.

Sealers	Mean ± S.D				Interpretation
	1 wk	2 wks	4 wks	12 wks	
Control	1.50 ± 0.50	1.00 ± 0.00	1.00 ± 0.00	1.00 ± 0.00	
AH26	2.67 ± 0.65	2.33 ± 0.77	1.92 ± 0.79	1.66 ± 0.65	Acceptable
AH Plus	2.42 ± 0.66	2.25 ± 0.62	1.58 ± 0.67	1.50 ± 0.67	Acceptable
Pulp Canal Sealer	2.58 ± 0.51	2.33 ± 0.49	1.75 ± 0.62	2.08 ± 0.67	Unacceptable
Adseal-1	2.17 ± 0.58	1.75 ± 0.75	1.58 ± 0.51	1.50 ± 0.67	Acceptable
Adseal-2	2.08 ± 0.67	2.00 ± 0.73	1.58 ± 0.67	1.41 ± 0.66	Acceptable

*Number of specimens: 4 for control group, 12 for experimental group

Adseal-1 and Adseal-2 had the least inflammatory reaction at 1 and 2 weeks. But the severity became same with AH Plus at 4 and 12 weeks. Adseal-2 showed lower inflammation than Adseal-1 at 1 and 2 weeks. There was no significant difference among the test materials ($p > 0.05$). The inflammation of all the sealer groups except Pulp Canal Sealer decreased when time elapsed ($p < 0.05$).