Garcia, C. A., Chavez, D., Jimenez-Estrada, I., Rudomin, P. Changes in primary afferent depolarization during the unmasking of sural responses following acute section of cutaneous...

Conference Paper · January 2006

CITATIONS
2

READS
27

1 author:

Carlos Amadeo García-Ayala
Instituto Moaj Lev
27 PUBLICATIONS **39** CITATIONS

SEE PROFILE

NEUROSCIENCE 2006

Atlanta, GA. USA. 2006.

Program#/Poster#: 146.10/I6

Title: **Changes in primary afferent depolarization during the unmasking of sural responses following acute section of cutaneous nerves in the anesthetized cat.**

Location: Georgia World Congress Center: Halls B3-B5

Presentation Start/End Time: Sunday, Oct 15, 2006, 9:00 AM -10:00 AM

Authors: ***C. A. GARCIA**, D. CHAVEZ, I. JIMENEZ-ESTRADA, P. RUDOMIN; Physiology, Cinvestav IPN, D. F., MEXICO.

In anesthetized cats the amplitude and segmental distribution of the cord dorsum potentials (CDP's) produced by stimulation of the saphenous n. (Saph) increases after sectioning the sural (SU) and superficial peroneal (SP) nerves without affecting the spontaneous negative-positive CDP's and associated dorsal root potentials (Abs Soc Neurosci 627.7, 2005). To test more directly the involvement of presynaptic mechanisms in the unmasking of the Saph responses, we examined the effects of acute Saph or SP section on the PAD of intact SU afferents. PAD was inferred from changes in the intraspinal threshold of SU terminals in L6. In 3 experiments Saph section increased the negative and positive components (NC's & PC's) of the SU CDP's (to 181%±44 and 209%±74 of control (mean±S.E.), respectively) and the NC´s to 198%±73, but not the PC's of the L6 SU intraspinal fields that were reduced to 44%±31. Saph section also reduced the power spectrum of spontaneous CDP´s in the 1-10 Hz range (to 15%± 6 at 3 Hz in L5 & L6) and the intraspinal excitability of SU terminals in L6 (to 79.2%±2.7 because of decreased tonic PAD). The excitability changes of SU terminals produced by SP conditioning increased from 116%±4 to 149%±18. On the other hand, in other 3 cats, SP section increased the NC's and PC's of the L6 SU-evoked CDP's to 106%±3.6 and 171%±62, and intraspinal fields to 151.4%±28 and 257%±113, the spontaneous CDP's power spectrum (to 192%± 27 at 3 Hz in L5 & L6) and the intraspinal excitability of the SU terminals to 139%±13 because of increased tonic PAD. The SP-induced excitability changes of SU endings changed from 159%±44 to 114%±3 (n=2). It is suggested that the information conveyed by the Saph and SP nerves is not equivalent in its action on the neuronal sets mediating the tonic and phasic PAD of SU terminals. It may reflect differences related to the segmental location and functional role of the diverse cutaneous inputs in the control of movement.

Disclosures: **C.A. Garcia** , None; **D. Chavez**, None; **I. Jimenez-Estrada**, None; **P. Rudomin**, None.

Support: NIH Grant NS09196

CONACyT Grant 36267N

[Authors]. [Abstract Title]. Program No. XXX.XX. 2006 Neuroscience Meeting Planner. Atlanta, GA: Society for Neuroscience, 2006. Online.