

CAPSAICIN (8%) PATCH INCREASES MULTIPLE ELECTRICAL NOCICEPTIVE PERCEPTION THRESHOLDS IN HEALTHY HUMAN SUBJECTS

R.J. Doll¹, J.R. Buitenweg¹, G. van Amerongen², J.L. Hay², G.J. Groeneveld², P.H. Veltink¹

¹*Biomedical Signals and Systems, MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede,* ²*Centre for Human Drug Research, Leiden, The Netherlands*

Background: Pre-operative nociceptive thresholds are able to predict patients susceptible to developing post-operative chronic pain. Thresholds are dependent on stimulus properties (i.e. pulse-width (PW), number of pulses (NoP), and inter-pulse interval (IPI)) and are related to different mechanisms in the nociceptive system. Measuring multiple thresholds enables a detailed observation of peripheral and central nociceptive processing. In this study, a model of capsaicin defunctionalization was used to investigate the effect on multiple simultaneously measured electrical nociceptive perception thresholds.

Methods: A cutaneous capsaicin patch (8%) was applied to the upper leg in 8 healthy human subjects. Perception thresholds (four sets of stimulus parameters varying PW, NoP, and IPI) were measured using a 5-needle electrode. Thresholds were measured on both the treated and adjacent untreated sites prior to application of the patch (day 0), and on subsequent days 2, 7, 28, and 84.

Results: Preliminary results showed that thresholds depended on stimulus parameters. Moreover, an increase in threshold on capsaicin treated sites was observed in three settings for days 7 and 28 compared to untreated sites.

Conclusions: With the presented data, increased electrical perception thresholds were observed due to capsaicin. Furthermore, this study confirms that thresholds depend on stimulus parameters. These data can be used to build a mathematical model of the nociceptive system and be used to interpret nociceptive changes.

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