**Evaluation of the Condition Place Preference Test for pain assessment in an Animal Model of Chronic Discogenic Low Back Pain**

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**Background:**

Patients with chronic discogenic low back pain (CDLBP), experience intervertebral disc degeneration, which may cause chronic neuropathic pain. For CDLBP patients, pharmacological treatment with conventional pain medicine is often not sufficient. Dorsal root ganglion stimulation (DRGS) has been shown as an effective treatment for such patients. To study the effect of DRGS a reliable method for pain assessment in an animal model for CDLBP is required, which not only indexes reflex based pain, but includes cognitive-emotional aspects. To study cognitive-emotional aspects of pain, the conditioned place preference (CPP) test is used. In this experiment, animals were conditioned using gabapentin, a drug known to be effective in neuropathic pain and previously tested in CPP (1).

**Methods:** Sprague-Dawley rats (200-250 grams) underwent the anterior annular puncture (AAP) procedure (*n=5 male, n=5 female*) as previously described (2). Before and after AAP procedure, development of hypersensitive hind paws was controlled using Von Frey tests.

Animals were conditioned in a CPP setup consisting of two conditioning chambers and one introduction chamber, with unique walls and floors. Animals were tested with open setup for 15 min to measure baseline preference. The following five days, animals underwent two conditioning sessions where they were placed in randomly assigned drug/chamber combinations following intraperitoneal injection of saline or gabapentin (100 mg/kg). After conditioning, animals were allowed access to the setup for 15 min, and time spent in each chamber was recorded.

**Results**

One animal was excluded due to hematoma development. No animals developed hind paw hypersensitivity (von Frey). There was no significant difference between average pretest and posttest (p= 0.4839). There was no sex effect. Two populations were present; animals with preference for the gabapentin chamber (*n=4*), and animals with little/no preference for saline (*n=5*).

**Discussion**

Despite no significant effect of gabapentin-conditioning was noted, CPP experiments continue to show promise to detect cognitive-emotional aspects of pain. A challenge of CPP experiments remains sensitivity of the test to sounds, smells and animal stress levels. A number of changes will be implemented in this protocol, such as housing animals in experiment chamber, saline injections at tests and use of “biased” experimental setups (3).

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