

Abstract

Although spontaneous pain is a global problem, there is still no effective treatment. Constructive research started only 40 years ago. Research based on pain mechanisms and potential treatment has been done on animal models of neuropathic pain. This thesis is focused on animal models, which could be either induced by chronic constriction of the sciatic nerve (CCI) or spinal nerve ligation (SNL). Both models should induce spontaneous, ongoing pain along with evoked pain (allodynia and hyperalgesia). Tests, made on these models, are based on detection and measurement of spontaneous pain, while not using an external stimulus. The outcome of the tests is not always effective. Most of the time, they do not evince signs of spontaneous pain. These tests are also less effective and fewer in numbers compared to those using external stimulus. The goal of this thesis was to analyze all the research including spontaneous and ongoing pain in CCI and SNL models. It was important to focus on certain methods that do not use external stimulus during testing. PubMed database was used for searching articles. The most common words searched were „spontaneous“ and „ongoing“. Found articles were evaluated and searched for methods indicating and measuring spontaneous pain without an external stimulus. Most of the methods which claim to measure spontaneous pain are not credible. They are in fact measuring it, but by using an external stimulus, which could hide any evidence showing the presence of spontaneous, ongoing pain. There is a small number of methods which do not use external stimulus. Even though they are thought to be affective, they usually have different outcomes and are still frowned upon. Scientists also question neuropathic pain models (CCI and SNL), which do not seem to be affective while inducing spontaneous, ongoing pain. Although a lot of the experiments do not detect the presence of spontaneous pain, the research is still moving in the right direction. It is leading up to unmasking the treatment goals as well as the effort to pursue a successful clinical trial, which will ensure full treatment for the people going through spontaneous, ongoing pain.