A BEHAVIOURAL AND PHARMACOLOGICAL STUDY OF RATS WITH CHRONIC COMPRESSIVE SCIATIC MONONEUROPATHY: AN ANIMAL MODEL OF NEUROPATHIC PAIN (Abstract)*. **Thesis. Fortaleza, 1995.**

*FERNANDA EDNA ARAÚJO MOURA***

Numberless obstacles limit the experiments in human chronic pain, and among these, the ethical limitations. Then, the development of animal models of chronic pain becomes necessary in order to understand the different aspects of chronic pain of the nociceptive and neuropathic types.

With the purpose of bringing some contribution for the study of neuropathic conditions in animals, we have reproduced the animal model of sciatic compressive mononeuropathy of Bennett and Xie (1988) modified by Seltzer (1990) in order to observe and quantify longitudinally the animal behavioural elements, namely the scratching behaviour, that has been suggested as sign of chronic pain. It is known that this behaviour is increased in normal animals as a result of injection of different excitatory neurotransmitters and in abnormal animals with adjuvant-induced arthritis.

We have also studied behaviourally the effect of central acting analgesic drugs (morphine, tramadol, naloxone), anticonvulsivants with analgesic properties (carbamazepine), antidepressant tricyclics (imipramine) and peripheral acting analgesic drugs (aspirin) on the nociceptive system of neuropathic animals aiming at corroborating pharmacologically our behavioural findings suggestive of chronic neuropathic pain .

Our results showed then that :

a) The scratching behaviour can be considered as a sign of chronic dysestesic pain, since it has been shown to be significantly increased in neuropathic animals ($p < 0.05$) as compared with control animals. Scratching was significantly increased ($p < 0.05$) already in the 1st day p.o. and it remained significantly ($p < 0.05$) increased until 7 months after surgery.

b) The increase of scratching behaviour is time-locked with the appearance of allodynia to thermal stimulation. The tail's withdrawal latency was significantly reduced ($p < 0.01$) from the 1st week up to 10 weeks after surgery.

c) The increase of scratching behaviour is time-locked with appearance of hyperalgesia to mechanical stimulation and signs of paresis on the affected limb.

d) Central acting drugs, like morphine, tramadol, carbamazepine and imipramine, reduced the increased scratching behaviour, what did not occur with aspirin, a peripheral acting analgesic drug.

KEY WORDS: **neuropathic pain, scratching, allodynia, hyperalgesia, paresis,opioids, imipramine, carbamazepine.**

* Estudo comportamental-farmacológico de ratos portadores de mononeuropatia ciática compressiva crônica: um modelo animal de dor neuropática (Resumo) .Tese de Mestrado, Universidade Federal do Ceará (Área: Farmacologia) . Orientador: Carlos Maurício de Castro Costa.

***Address: Rua Alice 58 casa 07, Cidade Funcionários, 60822-610, Fortaleza CE, Brasil.*