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Electrophysiological effects of diazepam and ketamine in convulsions induced by cunaniol.

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Introduction: The seizures models are important methods for the knowledge of epilepsy seizure that permit a better understanding of underlying phenomenon of seizure process. The epilepsy is a common disease in the population having incidence changeable. There are several experimental models of epilepsy that have been proposed for the understanding of epilepsy, on the trying of represent with accuracy the natural phenomenon. **Objective**: In this work we sought to determine the electrophysiological effects of control of seizures induced by cunaniol, with the use of agonists of GABAa and antagonist of NMDA. **Methods**: The plants of the genus *Clibadium spp.* were collected in the city of Concórdia do Pará-PA in area of solid ground. Immediately after collect the sample was cooled and taken to the Laboratory of Pharmacology and Toxicology of Natural Products (LFTPN), for the processing and obtaining the drug. In this work was used 24 rats Wistar with weight 180-230g, kept in environmental temperature, on 12h light / 12 dark cycle (light on 7:00), with food and water *ad libitum*. The utilization of animals in this work was approved by the Ethics Committee in Research with Experimental Animals UFPA by the opinion BIO024-10. After 5 days of adaptation period the animals were anesthetized with ketamine (50mg/kg) and xylazine (5mg/kg), fixed on the stereotaxic and were submitted to the surgery for the implant of electrodes in the motor cortex placed at 0.96mm posterior to bregma, 2mm from the midline and 2mm of deep, with stainless steel conjunction electrodes. The records were obtained 7 days after de surgery process, by the connection of the electrode to a digital data-acquisition system. Animals were divided in 4 groups, in 2 received cunaniol i.p. 3,93mg/kg, after 30min of record, one group received Diazepam (5 mg/kg i.p.) and another received ketamine (100mg/kg i.p.); another 2 groups, one received initially Diazepam (5 mg/kg i.p.) and another ketamine (100 mg/kg i.p.), after 30min of record both groups received cunaniol (3,92 mg/kg i.p.). The data were analyzed by the software Signal. **Results**: When the animals initially received EEC the EEG show an initial period of isolated spikes which enhance in amplitude and in number of spikes, leading to the *status ictal*, this occurs in cycles during the record. After 30min one group received diazepam that show able to control de seizure, leading the amplitude near to the basal. Another group received ketamine that was able to was able to contain the development of *status ictal*, but didn't able to contain isolates spikes in high amplitude. In another test was measured the potential neuroprotective by the administration of ketamine and Diazepam before EEC. Before application of EEC both records show amplitude similar to the basal, after administration of EEC the diazepam was able to contain the development of isolates spikes and *status ictal*, maintained the low amplitude in the record, and ketamine also was capable to contain the development of seizure activity, but the ketamine has the better action in control of seizure (30 min after seizure begin) than the neuroprotective action. **Conclusion**: The diazepam was able to contain seizure and effective in the neuroprotective action, and ketamine has a better action when used to control of seizure, this may be occur because of increased expression of NMDA receptors during a seizure.