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Poster Presentation

Animal Models of Epilepsy: The Impact of some Chemoconvulsants on Animal Models

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Abstract

We summarize some of the most frequently used rodent animal models of temporal lobe epilepsy and the impact of chemoconvulsants on them. Temporal lobe epilepsy is the most common epilepsy in humans in which seizures spread to the neighboring cortices and hippocampal neuron loss and other neuropathological take place. Temporal lobe epilepsy and the other form of epilepsy cannot be acquired in clinical studies with human, as a result the use of appropriate animal models is essential. Rodent must display a similar "clinical history" as the human counterpart including an initial latent period between the injury and the occurrence of spontaneous seizures chronic manifestation of spontaneous seizures and histopathological change deemed characteristic of temporal lobe epilepsy. Chemoconvulsants: 1) Kainic acid: Kainic acid was one of the first compounds used to model temporal lobe epilepsy in rodents, injected rodents show recurrent seizures. Kainic acid has the advantage of causing habitually hippocampus -restricted injury. 2) Pilocarpine: In the human half spontaneous seizures in the pilocarpine model, systemic or intracerebral injection of pilocarpine causes seizures that build up into a limbic. In addition, there are several network and neurochemical similarities between human temporal lobe epilepsy and the pilocarpine model. Pilocarpine which can also produce lesions in neocortical area cognitive and memory deficits commonly found in temporal lobe epilepsy patient's, are also present in pilocarpine rats. Chemoconvulsants allow rapid investigation of epileptogenic mechanisms and screening at the expense of high mortality of subject and spontaneous seizures.

Keywords: Epileps, Chemoconvulsants, Epileptogenic Mechanisms

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