

学 位 論 文 の 要 旨

所 属	三重大学大学院医学系研究科 生命医科学専攻 神経感覚医学講座	氏 名	田中 克浩
<p>主論文の題名：</p> <p>Hippocampal damage after intra-amygdala kainic acid-induced <i>status epilepticus</i> and seizure preconditioning-mediated neuroprotection in SJL mice</p> <p>主論文の要旨</p> <p>Exposure of the brain to a stressful stimulus that is sub-threshold for permanent injury can temporarily protect against cell death during a subsequent and otherwise damaging insult. Brief and non-harmful seizure episode (seizure preconditioning) can dramatically reduce hippocampal damage when given prior to status epilepticus (epileptic tolerance). We recently reported that status epilepticus-induced hippocampal damage in C57BL/6 mice could be reduced by approximately 50% when preceded 24h earlier by a brief, non-injurious generalized seizure induced by 15mg/kg systemic kainic acid (KA). Since other mouse strains might display different vulnerability to either seizure preconditioning or status epilepticus, we investigated whether epileptic tolerance could be acquired in another strain. SJL mice, reported to display greater seizure sensitivity to systemic KA, received intra-amygdala microinjection of KA to trigger status epilepticus. Intracerebral recordings confirmed seizures involved the ipsilateral hippocampus. Status epilepticus produced hippocampal damage which mainly affected the ipsilateral CA3 and hilus; a pattern similar to C57BL/6 mice. Seizure preconditioning using 20mg/kg systemic KA, but not 15mg/kg, significantly reduced hippocampal damage after seizure. These studies suggest status epilepticus induced by intra-amygdala KA in SJL mice models aspects of the pathophysiology of human mesial temporal sclerosis. Moreover, seizure preconditioning effectively produces neuroprotection in SJL mice, further establishing epileptic tolerance as a endogenous neuroprotection paradigm.</p>			

(注) 2, 0 0 0字以内にまとめて記入すること。