Abstract
Nicotinic acetylcholine (nACh) receptors evoke convulsive seizures both in nicotine intoxication and human epileptic disorders (e.g., autosomal dominant nocturnal frontal lobe epilepsy [ADNFLE]). Here, we performed behavioral and immunohistochemical studies to elucidate the mechanisms of nicotine-induced seizures. Nicotine at high doses (4 mg/kg, i.p.) evoked convulsive seizures, which was antagonized by non-selective (mecamylamine) and α7-selective (methyllycaconitine) nACh receptor antagonists. Nicotine-induced seizures were accompanied by significant and region-specific increments in Fos protein expression, a biological marker of neural excitation, in the piriform cortex (Pir), amygdala (AMG), medial habenular nucleus (MHb), thalamus (Th) and solitary tract, suggesting that these regions are potential causative sites for nicotine-induced seizures. Electrical lesioning (1 mA for 15 sec per side) of AMG significantly suppressed nicotine-induced seizures, whereas neither lesioning of the Pir, MHb nor Th affected the nicotine seizure induction. Furthermore, bilateral microinjection of nicotine (100 or 300 μg/μL/side) into the AMG effectively evoked convulsive seizures in a dose-dependent manner. The present results strongly suggest that acute nicotine treatment evokes convulsive seizures by activating amygdala neurons, mainly through α7nACh receptors.

PT668
Development of behavioral dysfunction in mice cohabited with brain disordered cage-mate
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Abstract
People who live with patients with brain disorders are considered as a potential risk group leading to mental disorder. They suffer from a caregiving burden and distressing situation. Consequently, the longer caregiving, the worse their quality of life. In spite of their devoted effort, caregiver’s deteriorated state has been overlooked. Here, we attempted to set a long-term housing model reflecting the particular situation. Mice were housed with a conspecific temporal lobe epilepsy model mouse or an inescapable foot-shock stress mouse models. After long-term housing, cage-mate was performed behavior tests and electrophysiological investigation. The conspecific cage-mate showed increased anxiety and depression-like behavior. Furthermore, they showed significantly reduced social interaction with juvenile and anesthetized mice. Behavioral dysfunction of cage-mate sustained four weeks after removing the mouse model. Interestingly, fluoxetine, serotonin selective reuptake inhibitor, hardly restored their behaviors. Our results suggest that a dweller whose cage-mate having brain disorder could develop abnormal behavior including reduced social and increased depression-like behavior. These findings may help to understand psychosocial or psychiatric symptoms frequently observed in at-risk nursing people or caregivers.

PT669
Investigation of the antiinflammatory and gastric side effects of pregabalin
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Abstract
Objectives: Nonsteroidal antiinflammatory drugs are used for the relief of inflammation, however gastrointestinal side effects restrict their clinical use. We aimed to investigate the antiinflammatory effects of pregabalin, a drug used in epilepsy, anxiety, neuropathic pain treatment, on carrageenan-induced paw edema and to evaluate its gastric side effects in Wistar rats.

Methods: Pregabalin 30,50,100mg/kg; indomethacin 5mg/kg (reference drug), vehicle (saline) were injected intraperitoneally before 100μl of 1% carrageenan administration into the right hind paws of the rats. Paw thickness was measured by a gauge calipers (Vernier Calipers) before (0th hour) and in every hour during 6 hours after induction of inflammation. Paw thickness of treated groups were compared with control group with One-way ANOVA. Also, paw thickness in 0th and 6th hours were compared within each group with two-way ANOVA. Pregabalin was administered orally for 10 days to evaluate gastric side effect. At the end of 10 day treatment, rats were sacrificed, gastric tissues were removed out, mucus secretion was determined spectrophotometrically, ulcer index was scored from score 0 (no petechia) to score 3 (petechia>5mm).

Results: There was no significant difference between 0th and 6th hours in paw thickness of all groups, except carrageenan group. Carrageenan significantly increased paw thickness in 6th hour compared to 0th hour. All doses of pregabalin and indomethacin significantly reduced paw thickness in 6th hour compared to carrageenan group. Pregabalin 50 and 100mg/kg similar to indomethacin significantly reduced mucus secretion and increased ulcer index compared to control while pregabalin 30mg/kg did not.

Conclusion: All doses of pregabalin exerted antiinflammatory effects comparable to indomethacin, 50 and 100mg/kg pregabalin showed gastric side effects as reduced mucus secretion and ulcer formation similar to indomethacin and 30mg/kg pregabalin may be reasonable dose for antiinflammatory effect without showing gastric side effects.

This study was supported by ‘Scientific Research Projects’ of Eskisehir Osmangazi University.

Key words: pregabalin, carrageenan-induced paw edema, gastric mucus, ulcer index

PT670
Antiinflammatory and gastric side effect of gabapentin
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Abstract
Objectives: Nonsteroidal anti-inflammatory drugs are effective in the treatment of inflammation. However, they have been associated with gastrointestinal complications such as gastric ulcer formation. Gabapentin is a drug that is used in the treatment of epilepsy, anxiety, depression and neuropathic pain. We aimed to study the antiinflammatory effects of gabapentin on carrageenan-induced paw edema and to determine its gastric side effects on gastric mucus secretion in Wistar rats.
Methods: Gabapentin 10, 30mg/kg; diclofenac 5mg/kg (reference drug), vehicle (saline) were injected intraperitoneally before 100µl of 1% carrageenan administration into the right hind paws of the rats. Paw thickness was measured by a gauge calipers (Vernier Calipers) before (0th hour) and in every hour during 6 hours after induction of inflammation. Paw thickness of treated groups were compared with control group with One-way ANOVA. Also paw thickness in 0th and 6th hours were compared within each group with two-way ANOVA. Gabapentin was administered orally for 10 days to evaluate gastric side effect. At the end of 10 day treatment, rats were sacrificed, gastric tissues were removed out, mucus secretion was determined spectrophotometrically.

Results: There was no significant difference between 0th and 6th hours in paw thickness of all groups, except carrageenan group. Carrageenan significantly increased paw thickness in 6th hour compared to 0th hour. All doses of gabapentin and diclofenac significantly reduced paw thickness in 6th hour compared to carrageenan group. Gabapentin 10 and 30mg/kg similar to diclofenac significantly reduced mucus secretion compared to control.

Conclusion: We suggest that gabapentin as an antinociceptive effective agent may also possess antiinflammatory features. Both doses of gabapentin showed antiinflammatory effect and reduced gastric mucus secretion similar to diclofenac.

Key words: gabapentin, carrageenan-induced paw edema, gastric mucus

PT671
The effects and mechanism of action of galangin on spatial memory in the Morris water maze test in rats

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Abstract
Objectives: Cholinergic system is one of the most important neurochemical systems which play role in spatial memory. Inhibition of acetylcholinesterase can mediate to improve cognitive functions via enhancing cholinergic transmission. It was shown that galangin, a flavonoid compound, has acetylcholinesterase enzyme inhibitory activity. The aim of this study was to investigate the effects of acute galangin administration on scopolamine-induced spatial memory impairments in rats.

Methods: The rats were trained in the Morris water maze over five daily acquisition sessions. Twenty-four hours after the last acquisition session, a probe trial was used to evaluate the rats’ spatial retention of the location of the hidden platform. During probe trial, the platform was removed from the maze, galangin 50, 100mg/kg, donepezil 1mg/kg (reference drug), vehicle were administered 30 minutes before the injections of scopolamine, a muscarinic cholinergic receptor antagonist. Distance to zone (platform) and time spent in escape platform quadrant were recorded and analyzed by using the Ethovision XT version 9.0 (Noldus, Wageningen, Netherlands). Results were statistically analyzed with one-way ANOVA.

Results: Scopolamine decreased the time spent in the escape platform quadrant and increased the distance to zone (platform) during the probe trial compared to the control group (p<0.05). Galangin 50, 100mg/kg and donepezil significantly increased the time spent in the escape platform quadrant and reduced the distance to zone (platform) in scopolamine treated rats (p<0.05).

Conclusion: Both doses of galangin reversed the effect of scopolamine. We suggest that galangin may improve memory via acting on muscarinic cholinergic receptors.

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Key words: galangin, spatial memory, morris water maze

PT672
The gliaprotection effect «Ampassea» as possible mechanism recovery of function CNS on the intracerebral hematoma model

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Abstract
The purpose of this study was to assess the impact of the drug «Ampassea» (AMPS, calcium hydroxy-nicotinoyl-glutamate) (0,1; 3 or 30 mg/kg) on glial homeostasis of the brain cerebral cortex during the experiment of acute disorders of cerebral circulation in hemorrhagic type in male Wistar rats. Rats 1.5h after the reproduction posttraumatic intracerebral hematoma (PIH) by the method of Makarenko and co-authors (2002) were injected intraperitoneally AMPS within 28 days 1 time per day. Then using the method of morphometry were assessed the quantitative composition and the proportion of pyramidal neurons and types of glial cells (astrocytes, oligodendrocytes, microgliosis) with the definition of the following types of intercellular ratios: the ratio of the total number of astrocytes to microgliosis (PIH1), oligodendroglialomas to microgliosis (PIH2) and astrocytes to the total number of oligodendroglia (PIH3) within the III and V layers of cerebrocortical cytostructure organization of rat brain. It was shown that the GIH led to the change of the glial cells ratio at the expense of increasing the proportion of microglia of 20% (P<0.05) compared to intact brain, leading to a change in the value of the glial index. In intact rats, the glial index had values PIH1 = 0,89; PIH2 = 1,07; PIH3 = 0,82. Gial index of experimental rats in acute hemorrhagic stroke was: PIH1 = 0,44; PIH2 = 0,39; PIH3 = 1,12. AMPS at a dose of 30.0 mg/kg decreased the percentage of microgliosis to the control values, which led to the correction of the glial index: PIH1 = 0,64; PIH2 = 0,95; PIH3 = 0,67.

Thus, AMPS (30mg/kg) contributes to the normalization of glia cellular composition at GIH, suggesting a possible systemic mechanism of positive therapeutic effects of the drug in case of acute disorders of cerebral circulation.

PT673
Pharmacological analysis of nicotine-induced tremor
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Abstract
Tremor is a common movement disorders and manifested as various diseases such as essential tremor, Parkinsonian tremor and drug-induced tremor. We previously demonstrated that nicotine elicited kinetic tremor by elevating neural activity of the inferior olive which is a potential causal site of essential tremor (PLoS one 10, e0123529, 2015), implying that nicotine may share common mechanisms to essential tremor in inducing kinetic tremor. Here, to clarify the pharmacological characteristics of nicotine-induced tremor, we investigated the effects of various anti-tremor agents on nicotine-induced tremor in

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