**Results:** Significant difference was found between the galantamine group and the donepezil group in the score variation of MMSE (12w: p<0.05, 24w: p<0.01), NPI (12w: p<0.05, 24w: p<0.001), and J-ZBI (24w: p<0.001). The NIRS measurement was observed to tend to reduce oxyhemoglobin suppression in CH8 channel centered on the superior frontal gyrus.

**Conclusions:** In this study, administering galantamine in AD patients that inhibit the reduction of cerebral blood flow in the prefrontal area and improve clinical symptoms overall, cognitive function, thereby reducing the care burden of caregivers was suggested.

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**PT598**

Therapeutic potential of mesenchymal stem cells from different sources

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**Abstract**

**Objective:** MSCs that have been isolated from different sources are expected to possess different secretion patterns which might influence the therapeutic mechanism in the disease environment.

**Introduction:** Through their paracrine effects such as immunomodulation and trophic functions, mesenchymal stem cells (MSCs) have been reported to possess the therapeutic potential to be used as a viable treatment for various diseases. MSCs can be isolated from different sources including adipose tissue, bone marrow, placenta and Wharton’s Jelly(WJ), and be expanded in vitro. Although they possess similar characteristics, the source of origin of the MSCs is thought to affect the overall secretion patterns and thus their applications in the disease environment.

**Methods:** MSCs from different sources (adipose, bone marrow, placenta, WJ) were cultured in serum free MEM-α medium for 24 hours at 37°C 5% CO₂. The collected media were mixed with protease inhibitors and were then concentrated up to 250-fold. The concentrated media was then mixed with lysis buffer consisting of 8M urea, 75mM NaCl, and 50mM Tris (pH 8.2). The protein mixtures were digested into peptide samples and were then scanned under LC-MS/MS. Secreted proteins that were identified were functionally analyzed by DAVID.

**Results:** The features and patterns of secreted proteins were highly dependent on the source of the MSC. While a majority of the secreted proteins of MSCs from neonatal sources (placenta, WJ) was highly involved in the developmental process, secreted proteins of MSCs from adult sources (adipose, bone marrow) were related to biological regulation and metabolic process.

**Conclusion:** This study shows that source difference is an aspect that needs to be considered for disease-specific mesenchymal stem cell therapeutics and personalized therapy of neurodegenerative diseases.

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**PT599**

Effect of single ketogenic diet containing medium chain triglycerides on cognitive functions in elderly adults

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**EATING DISORDERS: PT600 – PT600**

**PT600**

Oleylethanolamide Modulates Human Neural Responses to Food Stimuli in Obesity

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**Abstract**

**Background:** Obesity has emerged as a leading health threat and major risk factor for type 2 diabetes, cardiovascular disease, and hypertension. The neurobiological basis of overeating remains insufficiently known, hampering sufficient intervention strategies. Here we investigate oleylethanolamide, an agonist of PPAR-α. It has been implicated in weight regulation in animals but its respective role in humans is still unclear.

**Methods:** Associations between plasma oleylethanolamide, BMI and associated neurobiological impact (fMRI response to food stimuli) in 21 obese patients (BMI>30) and 24 controls were investigated. We hypothesized that oleylethanolamide interacts with BMI and fMRI response to food stimuli and may be affected in obese patients.

**Results:** Associations between oleylethanolamide and BMI differed significantly depending on whether subjects were obese or not (P=0.02). For obese individuals, oleylethanolamide showed a trend towards a positive correlation with BMI (P=0.06, rho=0.42) while this relationship was inverse for controls (P=0.07, rho=-0.34). We observed significant interactions between oleylethanolamide and obesity on food-related brain activation in cortical areas associated with reward processing and interoceptive signaling (P=0.009). fMRI-investigation of food-craving suggests that identified brain areas may be involved in suppressing ‘liking’ of food, in non-obese subjects.
Conclusions: Oleylethanolamide modulates motivation of intra-gastric feeding, possibly through normalization of PPAR-α-dependent vagal feedback to the brain in rodents. This supports its homeostatic function for regulating dietary fat intake via vagal-nigro-striatal pathways. Our study suggests that oleylethanolamide mediates reward-associated neural processes and this signaling plays an important role for hedonic regulation of food-craving and obesity in humans. It may be a valuable target for developing novel anti-obesity drugs.

EPILEPSY: PT601 – PT608

PT601
Evaluation of the behavioral and physiological roles of BRINP family genes in epileptic kindled mice
Evaluation of the behavioral and physiological roles of BRINP family genes in epileptic kindled mice
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Abstract
Objective: Induction of the BMP/RA-induced neural specific protein-1 (BRINP1) gene begins in the mouse nervous system from the early developmental stages, and it is highly expressed in various brain regions in adulthood. Studies have demonstrated that epileptic patients tend to have comorbid similar psychiatric symptoms to attention deficit hyperactivity disorder and autistic patients. In this study, the physiological role of BRINP1 was evaluated by performing behavioral pharmacological tests in kindled BRINP1-deficient (KO) mice. Using immunohistochemistry, c-Fos expression levels in kindled mice were also studied.

Methods: To induce kindling, mice were intraperitoneally injected with pentylentetrazol at a dose of 35 mg/kg once every 48 h. After the final challenge, mice were tested.

Results: The development of kindled convulsions was significantly different between wild-type and BRINP1-KO mice. BRINP1-KO mice showed less anxiety-like behavior than wild-type mice and the induction of kindling reduced anxiety-like behavior in both genotypes in the elevated plus maze test. In addition, c-Fos expression at steady state was significantly increased in the dentate gyrus of KO-kindled mice compared with wild-type mice. Furthermore, c-Fos expression was increased in the hippocampus, amygdala, and hypothalamus in both kindled and KO-kindled mice at 3 hours after pentylentetrazol injection, although this increase was similar in KO and wild-type mice.

Conclusion: These findings suggest that the BRINP1 gene is not directly involved in the epileptic behavior of kindling convulsions. However, elevated c-Fos expression in dentate granule neurons in BRINP1-KO mice at steady state implicated that BRINP1 involves regulation of neuronal excitability which is responsible for preventing onset of behavioral psychiatric symptoms.

PT602
The role of nitrergic oxide on the anticonvulsant activity of agmatine, valproic acid, gabapentin and phenytoin in mice
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Abstract
It was reported that nitric oxide, acting as a neuromodulator and neurotransmitter in central nervous system, has proconvulsant or anticonvulsant activities in different experimental convulsion models. The aim of the present study was to investigate the role of nitric oxide pathway on the anticonvulsant activities of valproic acid, gabapentin and phenytoin and also agmatine suggested as an anticonvulsant agent.

Swiss albino mice were used for the study. Seizures were induced by single intraperitoneal injection of 45 mg/kg pentylenetetrazol (PTZ). The existence of myoclonic jerk (MJ) and generalized tonic-clonic convulsions (GTCC). The existence of myoclonic jerk (MJ) and generalized tonic-clonic convulsions (GTCC). L-NAME increased the activity of valproic acid, gabapentin and phenytoin and also agmatine suggested as an anticonvulsant agent.

Agmatine and valproic acid significantly prevented but phenytoin and gabapentin did not prevent the GTCC and MJ. L-arginine reduced the activity of agmatine on MJ but did not have any activity on GTCC. L-NAME did not affect the activity of agmatine on both MJ and GTCC. Both L-Arginine and L-NAME did not affect the activity of valproic acid and phenytoin on both MJ and GTCC. L-Arginine did not change the activity of gabapentin on both MJ and GTCC. L-NAME increased the activity of gabapentin on both MJ and GTCC.

This study suggested that nitric oxide may have a role on the anticonvulsant activity of agmatine and gabapentin but not those of valproic acid and phenytoin.

PT603
The contribution of resveratrol to the antiepileptic effects of diazepam and gabapentin
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Abstract
Resveratrol (RES), a polyphenolic compound, was reported to have protective effect against convulsions. The effects of resveratrol alone or in combination with low-dose antiepileptics against pentylentetrazol (PTZ)-induced seizures and its histological effects in brain regions were investigated.

Mice were divided into 8 groups: Control, RES (75 mg/kg), diazepam (DZ) 0.01, 0.2 mg/kg, gabapentin (GBP) 10.20 mg/kg, RES+DZ 0.01mg/kg, RES+GBP 10mg/kg. Seizures were induced by 45 mg/kg i.p. PTZ administration. RES was given p.o for 7 days. In combination groups, DZ and GBP were applied i.p 30 min after the last dose of RES. Mice were observed for 30 min and seizure severity, seizure existence and mortality rates were evaluated. Cerebellum, cortex, hippocampus were isolated for histochemical evaluation of necrosis, cell death and hemorrhage.

In control group, the rate of seizure existence was determined as 100% whereas in GBP20 and D20,2mg/kg groups it was...