administered at baseline, weeks 1, 2, 4, and week 8. The dose of desvenlafaxine was fixed (50mg/day) until week 4, after which it was flexible up to 100mg/day, based on response and tolerability. **Results:** Montgomery Asberg Depression Scale scores significantly decreased from baseline (M=23.61, SD=5.51) to end of treatment (M=12.29, SD=8.24), p<0.0001. Severity of illness, as measured by the Clinical Global Impression scale, as well as self-reported depressive symptom scores, significantly decreased from baseline to end of treatment (p<0.0001). Improvement in quality of life (p<0.0001), levels of perceived stress (p<.0001), coping styles (p<.0001), and social impairment (p<.01) were noted over the course of treatment. **Conclusions:** Overall results indicate that desvenlafaxine is effective in reducing depressive symptoms and improving functioning in patients with persistent depressive disorder. Further, results provide evidence of good safety and tolerability of desvenlafaxine in this population. These results support the further investigation of desvenlafaxine for this condition using larger, placebo controlled, randomized control trials.

**PS101**

Oral Ketamine for Treatment Resistant Major Depression – A double blind randomized controlled trial

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**Abstract**

**Background:** Major depression is a devastating common disorder. Current pharmacotherapy relies on the monoaminergic theory, and requires a substantial time for full therapeutic effect. Regrettably, about 40% fail to attain remission, defined as Treatment Resistant Depression (TRD). Recently, intravenous ketamine has been shown to provide rapid, short lived, amelioration of TRD. We aimed to assess the clinical efficacy and safety of oral ketamine for TRD.

**Methods:** In a double-blind, randomized, placebo-controlled trial 27 TRD outpatients received either oral ketamine or placebo for 21 days. Patients were evaluated pre-trial and after 21 days. The main outcome measure was the change in Montgomery Asberg Depression Rating Scale (MADRS) score.

**Result:** 14 subjects were randomized to the ketamine group, and 13 to the placebo group. Of these, 12 and 9 respectively completed the study. No significant differences were obtained at time zero. A significant reduction of 13.4 points of the MADRS score was obtained after 21 days in the ketamine group (p=0.003) while a nonsignificant reduction of 2.9 was observed in the placebo group. Four subjects (33%) attained remission (MADRS ≤10) in the ketamine group compared to none in the placebo group. No serious side effects were reported.

**Conclusion:** In this study, sub-anesthetic oral ketamine produced rapid amelioration of depressive symptoms in ambulatory TRD patients, and was well tolerated. The results of this study suggest that oral ketamine may hold significant promise in the care of TRD.

**PS102**

Apathy in elderly depression and the antidepressant response

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**Abstract**

**Background:** Apathy is a common symptom in late-life depression, the treatment effect of antidepressant on apathy in those patients is still unclear. The aim of the present study is to reveal the difference of treatment response on apathy among the class of antidepressant.

**Methods:** A total of 128 elderly inpatients (>or=60 years old) with a DSM-IV major depressive disorder were recruited from Juntendo Koshigaya Hospital. Patients showing clinical evidence of dementia or with mini-mental state examination (MMSE) scores ≤24 were excluded. Finally 92 elderly patients were treated with selective serotonin reuptake inhibitors (SSRI, n=52) and serotonin and norepinephrine reuptake inhibitors (SNRI, n=40).

We evaluated depressive symptom using Hamilton Depression Scale (HAMD-D) and apathy using the Apathy Evaluation Scale Japanese version (AES-J) before and after 4 weeks treatment. Responder was defined as the patients with 50 percent improvement of each score by treatment.

**Result:** There are no significant differences between SSRI and SNRI on responder rates of HAMD-D and AES-J scores.

**Conclusion:** The treatment response on apathy in patients with late-life depression was not different according to the class of antidepressant. The results with a larger dataset will be reported in the congress.

**PS103**

Search for biomarkers for ketamine response from changes of cytokines in the patients with treatment resistant depression

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**Abstract**

**Objective:** Increased levels of pro-inflammatory cytokines were reported to be associated with depression. The aim of this study is to search for biomarker for ketamine antidepressant response using levels of cytokines to account for and predict clinical response.

**Methods:** we conducted a randomized, double-blind placebo-controlled study comparing the two single subanesthetic doses of ketamine infusion (0.5mg/kg & 0.2mg/kg) vs. placebo (PBO) to see the primary behavioral outcome and the alterations of cytokines level for the secondary outcome. The levels of cytokines such as CRP, IL2, IL6, TNF α measured at baseline, 240 mins, D2 (48 hrs), and D6 with concomitant mood ratings (HAMD-17 and MADRS) and their changes from baseline were assessed and correlated.

**Results:** Repeated- Measure ANOVA showed no significant differences of group effect on these four-cytokine levels (p=NS) but with significant time effect on IL2, IL6, TNF α (p=0.034, 0.001 & 0.004 respectively). In that, we observed minimal decreasing rate from baseline to 40 mins and 240 mins post-infusion in IL2 and IL6 (< 5%) while moderate decreasing in TNF α (10–15%). However, no correlations between decreasing rate of cytokines with mood improvement rate nor predictors of baseline or changes of cytokines for responder rate (>50% reduction of either HAMD-17 and MADRS from D2 to D4) were found. Nevertheless, if we divided the cytokine levels using median No into high and low level group, only baseline IL6 high level group (IL6 > 28953pg/ml) and CRP low level group (CRP < 518ng/ml)
showed better response in 0.5mg/kg than PBO groups (OR=8.9, CI1.2–20.2 and OR=10.3, CI 1.3–86.5, ps<0.05, respectively).  
Conclusion: the results did not find significant biomarkers to predict better response to 0.5mg/kg ketamine but baseline high IL6 and low CRP level may possible do. Moderate reduction of TNF α level with 0.5mg/kg ketamine might be related to initial antiinflammatory effect.

PS104  
An attempt to construct a 7-item short version of the Temperament and Character Inventory to predict the treatment response of patients with depression  
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Abstract  
Objectives: Previous studies have reported associations between Temperament and Character Inventory (TCI) and the response to treatment in patients with major depressive disorder (MDD). We aimed to determine which TCI items could predict the response to treatment with paroxetine in patients with MDD and to provide cut-off values of the scores from these items.  
Methods: Seventy-three patients were enrolled in this study. Participants completed the TCI and were treated with paroxetine for six weeks. The Montgomery-Asberg Depression Rating Scale (MADRS) was used to evaluate depression. Participants were divided into responders and non-responders. We used a chi-squared test to identify the 10 items with the strongest association with treatment response from among all 240 items on the TCI. We rated the answers to each item associated with treatment response as a “1,” and the answers associated with a non-response were rated as a “0”. We calculated predictive scores using 10 models. Each model consisted of 1–10 scores of the best 1–10 items. We defined cut-off values for predicting treatment responses using a receiver operating characteristic (ROC) curve analysis.  
Results: Ranked by the strength of the association with treatment response, items 174, 137, 70, 237, 106, 191, 34, 232, 161, and 215 significantly predicted treatment responses. All the models significantly predicted treatment response using a multiple logistic regression analysis. All predictive scores from models 1–10 significantly predicted treatment responses. The predictive score threshold of model 7 was 3/4 with an area under the curve (AUC) of 0.769 (CI 0.637–0.892), which was significantly better than the random threshold (AUC 0.5). The receiver operating characteristic (ROC) curve analysis revealed that the AUC for the model was 0.837 (CI 0.762–0.912).  
Conclusions: Some TCI items showed significant associations with the response to paroxetine treatment in the patients with MDD. We might predict the response using TCI predictive scoring, including items 174, 137, 70, 237, 106, 191, and 34 and a cut-off value of 3/4.

PS105  
Effects of CYP2C19 genotype on steady-state plasma concentrations of escitalopram and desmethyl metabolite in Japanese depressed patients  
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Abstract  
Aims: Several in vitro studies have suggested that escitalopram is a substrate of CYP2C19. In addition, plasma concentrations of S-enantiomer of citalopram were different between extensive metabolizers and poor metabolizers of CYP2C19 in healthy subjects and depressed patients. Thus, we studied the effects of polymorphisms of CYP2C19 gene on plasma drug concentrations in Japanese depressed patients.  
Methods: We aimed to determine which TCI items could predict the response to treatment with paroxetine in patients with MDD and to provide cut-off values of the scores from these items.  
Methods: Subjects were 412 depressed patients receiving 5, 10, 15 and 20mg of escitalopram. The mean ± SD (range) of age and body weight were 43.1 ± 17.3 (19–80) years, and 60.3 ± 13.4 (34–91) kg, respectively. Sample collections were conducted 14–16h after the bedtime dosing. Plasma concentrations of escitalopram and desmethyl escitalopram were quantified using HPLC. CYP2C19 genotypes were identified using PCR methods. The study was approved by the Ethics Committee of Hirosaki University Hospital, and written informed consent to participate in this study was obtained from the patients.  
Results: We calculated predictive scores using 10 models. Each model consisted of 1–10 scores of the best 1–10 items. We defined cut-off values for predicting treatment responses using a receiver operating characteristic (ROC) curve analysis.  
Results: Ranked by the strength of the association with treatment response, items 174, 137, 70, 237, 106, 191, 34, 232, 161, and 215 significantly predicted treatment responses. All the models significantly predicted treatment response using a multiple logistic regression analysis. All predictive scores from models 1–10 significantly predicted treatment responses. The predictive score threshold of model 7 was 3/4 with an area under the curve (AUC) of 0.769 (CI 0.637–0.892), which was significantly better than the random threshold (AUC 0.5). The receiver operating characteristic (ROC) curve analysis revealed that the AUC for the model was 0.837 (CI 0.762–0.912).  
Conclusions: Some TCI items showed significant associations with the response to paroxetine treatment in the patients with MDD. We might predict the response using TCI predictive scoring, including items 174, 137, 70, 237, 106, 191, and 34 and a cut-off value of 3/4.

PS106  
Nicotinic acetylcholine receptor antagonists for treatment-resistant depression: A meta-analysis.  
(Running title: Nicotinic antagonists for TRD)  
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Abstract  
Objective: Emerging preclinical and clinical evidence suggests a potential role of nicotinic acetylcholine receptors in the pathophysiology of depression. Several clinical trials have investigated the efficacy of nicotinic acetylcholine receptor antagonists in treatment-resistant depression. We performed this meta-analysis to investigate whether nicotinic acetylcholine receptor antagonists significantly improve symptoms in patients with major depressive disorder who have an inadequate response to standard antidepressant therapy.  
Methods: A comprehensive literature search identified 6 randomized controlled trials. These 6 trials, which included 2067 patients, were pooled for this meta-analysis using a random-effects model.  
Results: Nicotinic acetylcholine receptor antagonists failed to show superior efficacy compared to placebo in terms of the mean change in the Montgomery-Asberg Depression Rating Scale (MADRS) score (mean difference = -0.12 (95% CI= -0.96 to 0.71); response rate (risk ratio (RR)= 0.92 (95% CI= 0.83 to 1.02); and remission rate (RR= 1.01 (95% CI= 0.83 to 1.23).  
Conclusion: This meta-analysis failed to confirm preliminary positive evidence for the efficacy of nicotinic acetylcholine receptor antagonists in treatment-resistant depression. Further studies investigating the efficacy of various alternative treatment strategies for treatment-resistant depression will help