

## 11th International Congress on Psychopharmacology & 7th International Symposium on Child and Adolescent Psychopharmacology

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## 11th International Congress on Psychopharmacology & 7th International Symposium on Child and Adolescent Psychopharmacology

[Abstract:0008] [Mood disorders]

### Comparison of bipolar disorder patients with healthy controls in terms of inflammatory biomarkers

Murat Eren Özen<sup>a</sup> and Mehmet Hamdi Örum<sup>b</sup>

<sup>a</sup>Psychiatry Clinic, Private Adana Hospital, Adana, Turkey; <sup>b</sup>Department of Psychiatry, Adiyaman University School of Medicine, Adiyaman, Turkey

#### ABSTRACT

**OBJECTIVE:** The available evidence suggests that the main pathological processes underlying Bipolar Disorder and the potential harmful effects of mood episodes are closely related to changes in disorder activity and mood status. Although there are several studies on the existence of a relationship, the results are contradictory. Inflammatory changes occur in various episodes of Bipolar Disorder (BD) Type 1. These changes can be considered as peripheral symptoms of the disorder. In this study, we aimed to compare the inflammatory biomarkers in the BD patients in the manic, depressive and euthymic period with the healthy controls.

**METHODS:** Interleukins (IL) and tumour necrosis factor (TNF) values were measured and compared in 78 healthy controls with 108 patients with BD.

**RESULTS:** There was a statistically significant difference between the patient and control groups in terms of age ( $p = .040$ ) and educational status ( $p = .002$ ). There were no statistically significant differences between the BD subgroups with regard to clinical variables such as the age of onset ( $p = .862$ ), duration of disease ( $p = .389$ ) and the age of hospitalization ( $p = .092$ ). In the subgroup of mania, the rate of psychiatric hospitalization was higher than depression or other subgroups ( $p = .047$ ). When the blood values of peripheral biomarkers (IL-2, IL-4, IL-8, IL-10 and TNF $\alpha$ ) were compared, there was no statistically significant difference between the values of the peripheral biomarkers of all BD patients and the control group. The levels of IL-10 were higher in the control group than in the BD group, but not statistically significant.

**CONCLUSIONS:** As a result, there was no statistically significant difference between the two groups when comparing serum concentrations of basic IL and TNF in the BD group and control group. There was no difference in the comparison among the patient groups. IL-2 and IL-4 and manic episodes of IL-2 in manic episode were not significant. Therefore, in order to clarify the relationship between inflammatory biomarkers in BD and its possible association with pharmacological treatments, biomarker measurements are required in larger patient samples and ideally at different mood stages and even at different times of the same attack.

#### KEYWORDS

Interleukin; tumour necrosis factor; bipolar disorder; inflammation

[Abstract:0009] [Others]

### Evaluation of the prevalence of psychiatric disorders in geriatric outpatients: a difficult patient group

Murat Eren Özen<sup>a</sup> and Mehmet Hamdi Örum<sup>b</sup>

<sup>a</sup>Psychiatry Clinic, Private Adana Hospital, Adana, Turkey; <sup>b</sup>Department of Psychiatry, Adiyaman University School of Medicine, Adiyaman, Turkey

#### ABSTRACT

**OBJECTIVE:** The elderly population is progressively enhancing, and this increase is expected to be more evident in the near future. As the elderly population grows, there will be an increasing need for health services, following in rapidly rising medical, psychiatric, and social healthcare issues. The aim of the current study is to define the prevalence of the psychiatric disorder, including gender-based differences, demographic characteristics, and dispersion within all

#### KEYWORDS

Adjustment disorder; major depressive disorder; generalized anxiety disorder; geriatric psychiatry

elderly age groups, among patients applying the general psychiatry outpatient clinic.

**METHODS:** This is a prospective study for the elderly ( $\geq 65$  years) patients who applied the general psychiatry outpatient clinic of our university hospital between April 2018 and July 2018. Axis I diagnosis was made according to DSM-5 criteria. Patients' demographic characteristics were recorded.

**RESULTS:** The number of patients who visited the general psychiatry outpatient clinic was 1950, and the geropsychiatric patients ( $\geq 65$  years) constituted 10.4% ( $n = 203$ ) of the total patients. The female/male ratio was 1.44 ( $n = 120/83$ ). The most common psychiatric disorder was major depressive disorder (38.40%). Generalized anxiety disorder (GAD, 18.70%), adjustment disorder (AD, 9.30%), schizophrenia (7.30%) followed as the most common disorders in the geropsychiatric patient group. While GAD was statistically significantly higher in females ( $X^2 = 6.83, p = .008$ ), AD was statistically significantly higher in males ( $X^2 = 10.38, p = .002$ ).

**CONCLUSION:** Determining the frequency of psychiatric disorders in elderly patients and addressing the differences between genders is important for developing treatment strategies.

[Abstract:0074] [Addictions]

## The relationship of NLR and PLR with early prognosis in alcohol use disorder

Ayşe Erdoğan Kaya<sup>a</sup>, Ahmet Bülent Yazıcı<sup>a</sup>, Muhammed Kaya<sup>b</sup> and Esra Yazıcı<sup>a</sup>

<sup>a</sup>Department of Psychiatry, Sakarya University School of Medicine, Sakarya, Turkey; <sup>b</sup>Department of Internal Medicine, Health Sciences University Derince Research and Training Hospital, Kocaeli, Turkey

### ABSTRACT

**OBJECTIVE:** Along with the toxic effects of long-term and high dose alcohol use on the liver, brain and intestinal functions, it is known that alcohol triggers mechanisms that lead to systemic inflammation in the organism and multiple organ damage. Measurement of the patient's complete blood count parameters is an inexpensive and easy method for detecting the presence of inflammation. In particular, the Neutrophil Lymphocyte Ratio (NLR) and Platelet Lymphocyte Ratio (PLR) are two easily calculated indexes of systemic inflammation. The aim of this study was to compare the NLR and PLE values of patients diagnosed with chronic alcohol addiction with those of a healthy control group, as well as to examine the appropriateness of severity of withdrawal, NLR and PLR as early prognostic markers.

**METHODS:** The participants of the study were 18–65 years old, hospitalized patients (Patient group,  $n = 39$ ), and healthy controls ( $n = 39$ ). Routine blood tests were conducted in both groups. In order to assess the severity of withdrawal in the patient group, the routinely conducted Clinical Institute Withdrawal Assessment for Alcohol Scale, Revised (CIWA-Ar) scores were recorded. The patients were classified into two groups according to their use of alcohol during the 3 months after treatment as: Relapse (turning back to the previous pattern) or remission (not to consume any alcohol or not to continue to consume alcohol even if lapses are experienced). The effect of severity of withdrawal, NLR and PLR measured before treatment on relapse ratios in the 3-month follow-ups were examined.

**RESULTS:** All of the participants (39 patients and 39 healthy subjects) were male. The remission-relapse data of the six patients who did not attend for follow-up could not be obtained. Table 1 shows the data of patients with alcohol use disorder and the healthy controls. Remission and relapse groups' values of severity of withdrawal and NLR-PLR are given in Table 2.

**CONCLUSIONS:** In this present study, patients with alcohol use disorder had significantly higher NLR mean scores than the healthy controls. This led the researchers to think that inflammatory mechanisms may be involved in the development of alcohol addiction. Additionally, the NLR and severity of withdrawal in the relapse group were significantly higher compared to the remission group, and the PLR values did not reveal any significant differences. These results indicate that alcohol addiction is related to an inflammatory process. Furthermore, NLR and severity of withdrawal can be used to help in the prediction of early prognosis.

### KEYWORDS

Alcohol use disorder; NLR; PLR; prognosis

**Table 1.** Data of patients with alcohol use disorder and the healthy controls.

	Patient group ( $n = 39$ )	Control group ( $n = 39$ )	<i>p</i> -value
Mean age	40.05 (SD 11.60)	37.77 (SD 1.55)	.387
NLR mean	2.53 (SD 0.80)	1.62 (SD 0.50)	.000
PLR mean	116.65 (SD 48.75)	95.85 (SD 21.73)	.076

**Table 2.** Remission and relapse groups' values of severity of withdrawal and NLR-PLR.

	Remission (n = 20)	Relapse (n = 13)	p-value
NLR mean	2.35 (SD 0.83)	2.97 (SD 0.77)	.040
PLR mean	114.83 (SD 48.81)	127.34 (SD 58.01)	.555
1st day withdrawal severity mean	4.58 (SD 2.78)	8.00 (SD 4.81)	.017

[Abstract:0093] [Mood disorders]

## Differences in cognitive performance in patients with major depressive disorder treated with escitalopram, venlafaxine or vortioxetine

Juan J. Fernandez Miranda<sup>a</sup>, Danny F. Frias Ortiz<sup>a</sup> and Sylvia Diaz Fernandez<sup>b</sup><sup>a</sup>AGC SM V-HUCAB-SESPA Asturian Mental Health, Gijón, Spain; <sup>b</sup>Health Sciences Department, Universidad Camilo Jose Cela, Madrid, Spain**ABSTRACT**

**OBJECTIVE:** Major depressive disorder (MDD) is frequently accompanied by cognitive deficits that diminished the quality of life and psychosocial functioning. In fact, cognitive symptoms are one of the diagnostic criteria for depression, although there is not currently a proper assessment and treatment for them. Patients with response or remission of depressive symptoms still have in many cases residual cognitive deficits. Last tendencies are to use assessment methods that combine objective information, provided by clinicians (based on patient's cognitive performance observation in different tasks) and subjective, based on the patient's self-perceived difficulties. The aim of this study was to compare effectiveness (decreasing in depressive symptoms) and cognitive performance (assessed by the clinician and reported by the patient) between vortioxetine, escitalopram and venlafaxine at standard doses in patients with MDD undergoing treatment in an outpatient mental health unit in Spain.

**METHODS:** Patients with MDD treated in a mental health unit with vortioxetine 10 mg/d ( $N = 30$ ), escitalopram 20 mg/d ( $N = 30$ ) or venlafaxine 150 mg/d ( $N = 30$ ) were assessed with the Hamilton Depression Rating Scale (HDRS), the Beck Depression Inventory (BDI) [effectiveness], the Montreal Cognitive Assessment (MoCA) [objective cognitive performance] and the Perceived Deficits Questionnaire-Depression (PDQ-D) [subjective cognitive performance] at the beginning and after 12 weeks of treatment. Subjects included in the study had similar scores in HDRS ( $X$  between 17.6 and 17.9) and BDI ( $X$  between 17.4 and 18.1), and also in MoCA ( $X$  between 26.8 and 29.2) and PDQ-D ( $X$  between 10.7 and 11.8) at the beginning. Subjects with other psychiatric medications or with mental retardation or dementia were excluded.

**RESULTS:** After 3 months of treatment, there was symptomatic improvement, with a significant decrease in HDRS and BDI scores ( $p < .01$  for the three antidepressants, and  $p < .005$  for BDI in patients treated with vortioxetine). There were no significant differences after 3 months of treatment in MoCA scores in escitalopram and venlafaxine groups, but a mild increase in the vortioxetine group (26.7 vs. 29.1,  $p < .05$ ). There was a significant decrease in PDQ-D scores in patients with venlafaxine (11.2 vs. 8.7,  $p < .05$ ) and more marked with vortioxetine (11.8 vs. 5.3,  $p < .001$ ), but not in escitalopram group (9.7 vs. 10).

**CONCLUSIONS:** Treatment with vortioxetine (10 mg/day) showed to be as effective as treatment with escitalopram (20 mg/day) and venlafaxine (150 mg/day) in improving depressive symptoms measured with HDRS and BDI in patients with Major Depression Disorder after 12 weeks. And also it demonstrated to improve clearly subjective cognitive performance compared with escitalopram and venlafaxine when measured with PDQ-D. And, contrary to escitalopram and venlafaxine treatment outcomes, to reach a mild improvement in objective cognitive performance, measured with MoCA. Objective patient's cognitive performance and patient's self-perceived cognitive difficulties should be considered when choosing antidepressant treatments.

**KEYWORDS**

Cognitive performance; depression; antidepressant; escitalopram; venlafaxine; vortioxetine

[Abstract:0094] [Schizophrenia and other psychotic disorders]

## High doses of aripiprazole once-monthly in patients with severe schizophrenia: outcomes after 18 months of treatment

Juan J. Fernandez Miranda<sup>a</sup>, Sylvia Diaz Fernandez<sup>b</sup> and Danny F. Frias Ortiz<sup>a</sup><sup>a</sup>AGC SM V-HUCAB-SESPA Asturian Mental Health, Gijón, Spain; <sup>b</sup>Health Sciences Department, Universidad Camilo Jose Cela, Madrid, Spain**ABSTRACT**

**OBJECTIVE:** Not only effectiveness but also tolerability of antipsychotics is important to increase treatment compliance, a remarkable problem in patients with severe schizophrenia. Tolerability of antipsychotics is important to increase treatment compliance, and consequently to reach

**KEYWORDS**

Schizophrenia; treatment; outcomes; antipsychotics; doses; aripiprazole

rehabilitation goals in people with severe schizophrenia, who probably would need higher doses. The impact of inadequate treatment may contribute to relapse, hospitalization, loss of function, and suicidality. Long-acting-injectable antipsychotics, although established agents for the treatment of schizophrenia, differ in their formulation, pharmacodynamics, and dosing regimens. The aim of this study was to evaluate effectiveness and tolerability of high doses of aripiprazole once-monthly injectable (over 400 mg/month) in patients with severe (GCI-S of 5 and over) schizophrenia, and also treatment retention.

**METHODS:** Eighteen-month prospective, observational study of patients with schizophrenia who underwent treatment with aripiprazole once-monthly at doses of 600 mg and over in order to get clinical stabilization ( $n = 8$ ). Assessment of effectiveness included the GCI-S, the WHO-DAS and the Medication Adherence Report Scale (MARS) at the beginning and after 3 and 12 months of treatment. Drug tolerance was monitored with laboratory tests, weight and adverse effects reported. Other psychopharmacological treatments, hospital admissions and reasons for discharge were registered.

**RESULTS:** The average dose of aripiprazole once-monthly was 720 (110) mg. (range: 600–800). Tolerability was good, with less and mild side effects reported than with previous treatments. And there were no discharges due to side effects or to relevant biological parameters alterations. Weight and prolactin levels decreased, but not significantly. Retention rate in treatment after 18 months was 100%. Effectiveness was high: after 18 months with high doses, GCI-S decreased from 5.3 (0.6) to 4.4 (0.7) ( $p < .01$ ) and also WHO-DAS, in the four areas: self-care,  $p < .01$ ; occupational,  $p < .05$ ; family,  $p < .01$ ; and social impairment,  $p < .01$ ). The MARS increased from 4.9 (0.7) to 9.2 (0.9),  $p < .005$ . Changes were significant ( $p < .05$  and over) since assessment visits at 3th or 6th month of treatment. There were no hospital admissions. And there was also a decrease in the use of other antipsychotics and, specially, of antiparkinsonian treatments.

**CONCLUSIONS:** We highlight that the tolerability and effectiveness of aripiprazole once-monthly doses higher than 400 mg every 28 days in routine clinical practice is very good, showing a very low discontinuation rate, and being useful in improving treatment adherence for patients with schizophrenia who have severe symptoms and impairment. And who got clinical stabilization and also achieve better social functioning levels and increased awareness of illness with those high doses. No treatment discontinuation supports such good tolerability and patient acceptance of injectable aripiprazole as maintenance treatment. The clinical advantages of the results will provide additional guidance to clinicians who are considering the management of severely symptomatic patients with high doses of aripiprazole once-monthly as an alternative approaching (i.e. to clozapine).

[Abstract:0096] [Schizophrenia and other psychotic disorders]

## Suicide prevention with second-generation long-acting-injectable antipsychotics among people with severe schizophrenia

Juan J. Fernandez Miranda<sup>a</sup>, Sylvia Diaz Fernandez<sup>b</sup> and Danny F. Frias Ortiz<sup>a</sup>

<sup>a</sup>AGC SM V-HUCAB-SESPA Asturian Mental Health, Gijon, Spain; <sup>b</sup>Health Sciences Department, Universidad Camilo Jose Cela, Madrid, Spain

### ABSTRACT

**OBJECTIVE:** Adherence to treatment of people with severe schizophrenia is important to reach clinical and rehabilitation goals and to prevent suicidal behaviour. Treatment adherence in patients diagnosed with schizophrenia is an important risk factor for illness-relapse and hospitalization. Lack of compliance potentially strengthens suicidal behaviour. Improving adherence is important, since poor treatment adherence has been shown to be associated with suicidal risk. Long-acting-injectable (LAI) antipsychotics can be considered as an effective treatment strategy to improve adherence. An area of interest is whether they can indirectly decrease suicide or not. The purpose of this study was to know the retention in treatment of people with severe schizophrenia, suicide rates among them and treatment characteristics (case managed vs. standard; oral vs. long-acting-injectable medication) related.

**METHODS:** An 8-year prospective, observational, open-label study of patients with severe schizophrenia (GCI-S  $\geq 5$ ) undergoing community-based, case-managed treatment in Gijon (Spain) ( $n = 200$ ). Assessment included the Clinical Global Impression severity scale (CGI-S) and the WHO Disability Assessment Schedule (WHO-DAS) at the beginning and after 3, 12, 24, 36, and 96 months. And also medications prescribed, laboratory tests, weight, adverse effects reported, hospital admissions and reasons for treatment discharge, including deaths by suicide, were recorded.

**RESULTS:** CGI-S at baseline was 5.9(0.7). After 8 years 42% of patients continued under treatment (CGI-S = 4.1 (0.9);  $p < .01$ ); 37% were medical discharged (CGI = 3.4 (1.5);  $p < .001$ ) and continued standard treatment in mental health units; WHO-DAS decreased in the four areas (self-care and employment  $p < .01$ ; family and social  $p < .005$ ) in both groups; 7% had moved to other places, continuing treatment there; 10% were voluntary discharges. Twelve

### KEYWORDS

Schizophrenia; treatment; suicide; antipsychotics; injectable; adherence



patients died during the follow-up, four of them by suicide (2%; suicide rates among people with schizophrenia in standard treatment in Spain between 5% and 10%). Sixty-five per cent of all patients were treated with second-generation long-acting-injectable antipsychotics (risperidone, paliperidone and aripiprazol), with high tolerability. Among them, there was higher retention (4 vs. 16 patients voluntary discharges;  $p < .01$ ) and less suicides than patients with oral antipsychotics (1 vs. 3 patients).

**CONCLUSIONS:** Retention in the treatment of patients with severe schizophrenia in a case-managed programme and treated with second-generation long-acting antipsychotics was really high and seemed to be useful to decrease the high rates of suicide among them. Both treatment characteristics (case management and 2G-LAI antipsychotic use) helped to improve treatment compliance and suicide rates than standard treatment and oral medications. Our results highlight that a combination of case-managed monitoring and LAI treatment helped to improve treatment compliance and to reduce suicidal behaviour compared to standard treatment in patients with severe schizophrenia.

[Abstract:0120] [Addictions]

## Sociodemographic and clinical characteristics of patients with substance abuse in a locked inpatient psychiatry unit

Merve Yılmaz, Nuray Atasoy, Levent Atik and Özge Saraçlı

Department of Psychiatry, Bülent Ecevit University, Zonguldak, Turkey

### ABSTRACT

**OBJECTIVE:** In this present study, it was aimed to examine the sociodemographic and clinical characteristics of patients with drug abuse in the locked inpatient psychiatry unit of Bülent Ecevit University School of Medicine's Hospital.

**METHODS:** When the medical records of the patients in the locked inpatient psychiatry unit were examined, it was learned that 45 patients had narratives of substance use. 86.7% were male and 13.3% were female and the mean age was 19.06 ( $SS \pm 11.37$ ) and mean duration of substance use was 5.6 ( $SS \pm 10.87$ ) years. The educational status of the patients were 40% high school graduates, 33.3% ( $n = 5$ ) high school students, 13.3% primary school graduates, 6.7% university graduates. The substance used by the patients were bonzai (73.3%), cannabis (66.7%), bally (13.3%) and ecstasy (MDMA) (13.3%).

**RESULTS:** Simultaneous use of cigarettes and alcohol in 80% of patients, smoking in 13.3%, smoking and alcohol abuse in 6.7% were observed. It was learned that 73.3% of the patients started to use the substance in the friendship environment. It was observed that 73.3% of the patients did not come to follow-up interviews after discharge. Sixty per cent of the patients were working and 40% were not involved in any work.

**CONCLUSIONS:** Substance abuse is a common public issue. Early diagnosis and treatment of substance abuse are so important.

### KEYWORDS

Substance abuse;  
sociodemographic

[Abstract:0172] [Addictions]

## Effectiveness of donepezil in patients with the combined abuse of cannabis and tramadol suffering from cognitive impairment

Inara Ilgizovna Khayredinova and Zarifjon Sharifovich Ashurov

Department of Psychiatry and Addictions, Tashkent Medical Academy, Tashkent, Uzbekistan

### ABSTRACT

**OBJECTIVE:** Acetylcholinesterase inhibitors have a great evidence base in the treatment of Alzheimer's disease, however in patients with the combined abuse of hashish and tramadol has not been studied. To determine the effectiveness of acetylcholinesterase inhibitors, as an acetylcholinesterase inhibitor, donepezil hydrochloride was examined in patients with the combined abuse of cannabis and tramadol.

**METHODS:** Thirty-one patients with mild cognitive impairment who were treated for the combined abuse of hashish and tramadol were examined. All patients are male, aged from 24 to 39 years. The survey was performed using clinical and psychopathological, clinical and anamnestic methods using the Montreal Cognitive Assessment (MoCA), with repeated conducting after 12 weeks. The main group included 19 patients who is in treatment with donepezil hydrochloride 10 mg/day, the control group included 12 people received placebo. The duration of treatment was 12 weeks.

### KEYWORDS

Donepezil; mild cognitive  
impairment; cannabis abuse;  
tramadol

**RESULTS:** When conducting a MoCA test before the treatment, the average score in the first group was  $23.2 \pm 0.4$ , in the second group was  $23.12 \pm 0.2$ . After the 3 months of treatment, this indicator in the main group was  $24.1 \pm 0.8$ , and in the control –  $23.12 \pm 0.6$ . As a result of treatment with donepezil, there was an improvement in the following parameters of cognitive functions, such as verbal memory, attention and executive skills in 73.6% ( $n = 14$ ), and also in 57.8% ( $n = 11$ ) behavioural improvements.

**CONCLUSIONS:** Acetylcholinesterase inhibitors, as in the example of donepezil hydrochloride treatment in patients with the combined abuse of cannabis and tramadol, have a positive effect on cognitive functions and behaviours.

[Abstract:0179] [ADHD]

## The clinical features of sluggish cognitive tempo accompanying attention-deficit/ hyperactivity disorder

Nagihan Cevher Binici and Ayşe Kutlu

Dr. Behçet Uz Children's Hospital, Health Sciences University, İzmir, Turkey

### ABSTRACT

**OBJECTIVE:** Attention-deficit/ hyperactivity disorder (ADHD) is a mental disorder with a highly heterogeneous presentation and clinical appearance. In recent years, children with Sluggish Cognitive Tempo (SCT), characterized by a set of symptoms such as concentration problems, sleepy appearance, weakness in social relations and daydreaming, have begun to be mentioned. And it has been put forward that SCT can be seen together with ADHD but it is a separate disorder. The aim of the current study is to determine the clinical features of SCT accompanying ADHD in Turkish children and adolescents by comparing the scores of scales that fulfilled by their parents and teachers.

**METHODS:** The clinical features of SCT were determined by comparison of scores of Child behaviour checklist(CBCL) and Teacher report form (TRF) of 55 children with ADHD and 55 children with ADHD and SCT in the ages of 6–17 years. Turgay DSM-IV-Based Child and Adolescent Behaviour Disorders Screening and Rating Scale (T-DSM-IV-S) was used for the diagnosis of ADHD. The patients' parents – the patients who have scored 3 points and more from the 4 questions of CBCL (8th, 17th, 80th and 102nd questions) were predicted that they might be SCT clinic – were asked to fill the Barkley Child Attention Scale for more detailed evaluation. In this questionnaire, the cut-off point was taken as 23 points. As a result of the clinical interview and evaluation of the scales filled by the teacher and the family, the presence of SCT and ADHD was evaluated and the sub-diagnosis groups of ADHD were determined. The mental capacities of the children were evaluated clinically and when they were thought to be mentally insufficient, the WISC-R intelligence test (Wechsler Intelligence for Children-Revised Form) was implemented. Patients with any psychiatric diagnosis other than ADHD or SCT or who had undergone head trauma with any neurological disease or loss of consciousness or who were taking any psychotropic medication or had a history of substance use were excluded from the study.

**RESULTS:** Gender distribution is similar between the ADHD + SCT diagnosis groups and the ADHD diagnosis groups. Ages of children with ADHD and SCT were significantly older than the others ( $9.40 \pm 2.44$  and  $7.85 \pm 1.88$ ;  $p < .05$ ). SCT was more associated with ADHD-inattention type ( $p < .05$ ). In both CBCL and TRF subscales the scores of internalization and withdrawal subscales of children with ADHD and SCT were significantly higher than the children in ADHD group ( $p < .05$ ). Parent CBCL the scores of externalization, delinquent behaviour and aggression subscale of the children with ADHD + SCT were lower than the children with ADHD ( $p < .05$ ). Similarly TRF scores of externalization and aggression subscale of children with ADHD + SCT were lower than the children with ADHD ( $p < .05$ ).

**CONCLUSIONS:** The clinical features of SCT of Turkish children are consistent with children of the other countries and SCT may be defined as a new cluster of symptoms with intercultural validity. However, the question whether this is a subtype of ADHD or a distinct disorder is still a subject that needs the under investigation to be remained.

### KEYWORDS

ADHD; child; clinical feature; sluggish cognitive tempo

[Abstract:0181] [Others]

## Evaluation of quality of life in patients with cochlear implant

İsmail Demir<sup>a</sup>, Erkan Karataş<sup>a</sup>, Arzu Çalışkan Demir<sup>b</sup> and Özlem Özel Özcan<sup>b</sup>

<sup>a</sup>Department of Otolaryngology, Inonu University, Malatya, Turkey; <sup>b</sup>Department of Child and Adolescent Psychiatry, Inonu University, Malatya, Turkey

**ABSTRACT**

**OBJECTIVE:** The importance of cochlear implant operation is increasing day by day since the hearing loss that occurs in congenital or pre-language period has a significant effect on the quality of life of the person. The aim of this study is to evaluate the quality of life before and after the operation of the patients undergoing cochlear implant surgery.

**METHODS:** In this study, 40 patients between the ages of 3–15 who underwent cochlear implantation between May 2014 and September 2015 were included in the Inonu University School of Medicine, Turgut Ozal Medical Center, Otorhinolaryngology Department. Children's Quality of Life Scale (PedsQL) consisting of 23 items was applied to determine the quality of life before and after the operation of the patients who had been using the device regularly for at least 1 year after the cochlear implant operation.

**RESULTS:** When the quality of life data of the patients were evaluated before and after the operation, a significant increase was observed in the PedsQL scores after the operation. Quality of Life (LQ) Physical Functionality score, Emotional Functionality score, Social Functionality score and School Functionality score were increased.

**CONCLUSIONS:** As quality of life is a complete well-being in terms of physical, spiritual, social and personal beliefs, clinicians strive to improve the quality of life of patients. This study shows that cochlear implant operation significantly improves quality of life in patients with hearing loss.

**KEYWORDS**

Cochlear implantation; quality of life; quality of life scale; hearing loss

[Abstract:0201] [Addictions]

## Comparison of clinical features according to aggression and impulsivity severities of patients with substance use disorder

Sevilay Kunt<sup>a</sup> and Pinar Çetinay Aydın<sup>b</sup>

<sup>a</sup>Department of Psychiatry, Health Sciences University Erenkoy Mental Health Research and Training Hospital, Istanbul, Turkey; <sup>b</sup>Department of Psychiatry, Health Sciences University Bakirkoy Mental Health Research and Training Hospital, Istanbul, Turkey

**ABSTRACT**

**OBJECTIVE:** It is known that aggression and impulsivity levels are high in patients with substance use disorder (SUD). Rather than an unidirectional relation between aggression and substance abuse such that one increases the tendency to the other, it is suggested that a bidirectional relation exists between them such that each increases the impact of the other. It was observed that the individuals who had high aggression and who had difficulty to control had started to use the substance to provide relief, but they showed aggressive behaviours during the period of intoxication and withdrawal. There are studies showing that impulsivity affects the age of first use, the amount of use and the way of substance use. In this study, we aimed to compare the clinical features of the patient groups according to the severity of impulsivity and aggression in the patients with SUD.

**METHODS:** Patients who were diagnosed with SUD according to DSM-5 and hospitalized between July 2017 and December 2017 in Bakirkoy Mental Health Research and Training Hospital, 12th Psychiatry Clinic were included in the study. Aggression levels of the patients were evaluated with the Buss-Perry Aggression Scale (BPAP) and impulsivity levels were evaluated by Barratt Impulsivity Scale Short Form (BDI-11). A sociodemographic and clinical data form was used to determine the clinical features of the patients. The Clinical Global Impressions scale (CGI) was used. Depending on the aggression and impulsiveness level, patients were divided into "low" and "high" groups with 58 and 55 patients respectively. During inpatient treatment; any consultation request, physical detection and additional treatment applications were recorded. Groups were compared according to physical restraint application, parenteral additional treatment, consultation request, duration of substance use, number of inpatient treatment, number of parenteral additions, number of physical detections, duration of hospitalization.

**RESULTS:** The duration of substance use and the duration of hospitalization was longer, the number of inpatient treatment was higher in the groups with high aggression and impulsivity. During the inpatient treatment, the need for consultation was found to be higher in patients with severe impulsivity and aggression. CGI scale scores were higher in both groups with high aggression and impulsivity. In addition to these parameters, the need for physical detection was higher in the group with severe impulsivity than the group with low impulsivity.

**CONCLUSIONS:** The severity of impulsivity and aggression affect the way of substance use and the prognosis of the disease. It is important to determine the severity of aggression and impulsivity in patients with SUD, in addition to the presence of admission diagnosis, gender, age, past history of treatment, history of the disease, family history of psychiatric disease and additional psychiatric disorder, which are defined as factors affecting the duration and number of hospitalizations in the literature. It is important to consider the level of aggression and impulsivity in treatment and clinical management difficulties of patients.

**KEYWORDS**

Aggression; impulsivity; substance use disorders



[Abstract:0298] [Autism]

## Serum S100B, NT-3, and BDNF levels in children with autism spectrum disorder according to the initial type

Hüseyin Tunca<sup>a</sup> and Elvan İşeri<sup>b</sup><sup>a</sup>Diyarbakir Children's Hospital, Diyarbakir, Turkey; <sup>b</sup>Department of Child and Adolescent Psychiatry, Gazi University School of Medicine, Ankara, Turkey

### ABSTRACT

**OBJECTIVE:** Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder characterized with impairments in communication, reciprocal social interaction, presence of restricted and repetitive patterns of behaviour. Neuroinflammation and neurotrophic factors including brain-derived neurotrophic factor (BDNF) and neurotrophin 3 (NT3) are implicated in the pathophysiology of autism spectrum disorder (ASD). The aim of this study was to examine the interventions on the serum levels of S100B in relation to NT3 and BDNF in patients with congenital ASD in comparison with the patients with regressive ASD.

**METHODS:** In this study, has been enrolled 52 children in the range of 29–72 months with diagnosed as ASD by the DSM-5 diagnostic criteria based on clinical examination. ASD patients were divided as two groups; symptoms of autism from birth to ASD group called as “Congenital ASD ( $n=37$ )” group, symptoms of autism beginners after 18 months to ASD group called as “Regressive ASD ( $n=15$ )” group. Also, it has been enrolled 29 healthy children in the range of 25–65 months as a control group. From all included participants collected blood samples. The blood samples were centrifuged, and then the separated serum was stored at  $-80^{\circ}\text{C}$  until analysed for S100B, BDNF and NT3 levels. All statistical analyses were performed by using the SPSS for Windows 22.0 (SPSS Inc, Chicago, IL). Statistical significance level was accepted as  $p < .05$ .

**RESULTS:** It has been no significantly statistical difference in terms of age and gender at congenital ASD, regressive ASD and control groups ( $p > .05$ ). It has been determined statistically significant difference in terms of blood S100B values of the study groups ( $p < .05$ ). Post-hoc pairwise comparisons revealed significant difference between the congenital ASD group and the control group. Serum S100B level of congenital OSB group was significantly higher than the control group. On the other hand study groups have no statistically significant difference in terms of serum BDNF and NT3 levels ( $p > .05$ ).

**CONCLUSIONS:** In the present study, S100B level was found to be higher in patients with congenital ASD than regressive ASD and control groups. Association of serum levels of S100B with autoimmunity were examined in children with ASD in a previous study. In the present study shows that serum S100B level is increased in patients with congenital ASD. Neurotrophic factors including NT3, and BDNF play a critical role in many processes in CNS including neurogenesis, synaptic plasticity, long-term potentiation and all cognitive functions. In previous studies, NT3 has been shown to be involved in the development and survival of the climbing fibre system of the inferior olive and the cerebellar Purkinje cell. Several studies show that serum NT3 levels are reduced in children with ASD. There are studies showing that BDNF levels are high in autism as well as studies showing that it is low. In the present study, BDNF and NT3 level in serum was not found to be higher in comparison with ASD and controls.

### KEYWORDS

Autism spectrum disorder; S100B; NT-3; BDNF

[Abstract:0341] [Disruptive behavior disorders]

## Disruptive mood dysregulation disorder (DMDD): an elementary school sample

Leyla Ezgi Tüğen<sup>a</sup>, Muhsine Göksu<sup>b</sup>, Ayşe Burcu Ayaz<sup>b</sup> and Muhammed Ayaz<sup>c</sup><sup>a</sup>Erenköy Mental Health and Disorders Hospital, Department of Child and Adolescent Psychiatry, Istanbul, Turkey; <sup>b</sup>Department of Child and Adolescent Psychiatry, Marmara University, Istanbul, Turkey; <sup>c</sup>Psychology Department, Doğuş University, Istanbul, Turkey

### ABSTRACT

**OBJECTIVE:** Disruptive mood dysregulation disorder (DMDD) is a new diagnosis for children and adolescents and the prevalence ranges from 0.8% to 8.2% in community sample with very high rates of comorbidity. The aim of this study was to determine the frequency of DMDD in a population-based sample 2) to determine the frequency of comorbidities in children with DMDD.

**METHODS:** We performed a cross-sectional community-based study in an elementary school in the Pendik District of Istanbul. The Childhood Behaviour Checklist Scale (CBCL) was administered to all students and we recruited a total of 453 children out of 650 children (between 6 and 10 years of age). 93 (21.41%) children with a total score of 3 A (attention, anxious/depression and aggression) subscale scores in CBCL 180 and over were evaluated as being at risk for DMDD. Thirty of the 93 children were evaluated by a diagnostic interview.

### KEYWORDS

DMDD; prevalence; comorbidity

**RESULTS:** Four (0.88%) of 30 children were diagnosed with DMDD. All children diagnosed with DMDD were found to meet the oppositional-defiant disorder (ODD) criteria. Nine of 30 children were diagnosed with attention-deficit/hyperactivity disorder, 2 had Depression Disorder, 5 had Social Anxiety Disorder, 5 had Separation Anxiety Disorder.

**CONCLUSIONS:** As a result of this present study, we found the frequency of DMDD as 0.88% in our sample of community-based 453 children. The results of community-based prevalence studies related to DMDD have been shown to vary, but the prevalence decreases significantly when DSM-5-based time and frequency criterion is applied to the symptoms. The high rate of comorbidity of DMDD causes the diagnosis validity to be questioned

[Abstract:0354] [Epidemiology]

## Prevalence of Catatonia symptoms among child and adolescents in a psychiatry clinic

Alican Aygün, Şafak Eray and Ayşe Pınar Vural

Department of Child and Adolescent Psychiatry, Uludag University, Bursa, Turkey

### ABSTRACT

**OBJECTIVE:** Catatonia is a psychomotor syndrome which can include motor, mental, behavioural and vegetative symptoms. It is characterized by a variety of symptoms, most often excitement, immobility, stupor, catalepsy, grimacing, echolalia, echopraxia, stereotypies, mannerisms, logorrhoea, verbigeration, negativism, staring and withdrawal. Catatonia has been underestimated topic in children and adolescents. It is estimated the incidence of catatonia (all syndrome types) in children and adolescents to be 0.16 million per year. In psychiatric populations, this frequency differs greatly, ranging from 0.6% to 17%. In this study, we examined the prevalence of catatonia in the patients who were hospitalized in a child and adolescent psychiatry clinic between 15 October 2017 and 15 January 2018.

**METHODS:** The study includes 49 children and adolescents inpatients. All participants evaluated by a child and adolescent psychiatrist with the help of Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) and an Information Collection Form (ICF). ICF created by authors and includes sociodemographic variables and symptoms of catatonia according to DSM-5.

**RESULTS:** The study included 28 females and 21 males. Twenty-seven patients were diagnosed with depression, 11 patients with psychotic disorder, 7 with bipolar disorder, 2 with obsessive-compulsive disorder and 2 with anorexia nervosa. The mean age of the participants was 15.36 (SD ± 1.75). Three out of 49 patients were diagnosed with catatonia. According to DSM-5, two patients with depression and one psychotic disorder met the catatonia diagnostic criteria. The prevalence of catatonia was found to be 6.12% in child and adolescent who were hospitalized in Uludag University School of Medicine. The prevalence of catatonia in children and adolescents with psychotic disorders was 9% and in children and adolescents with depression it was 7.4%.

**CONCLUSIONS:** In the literature, reports about the catatonia and its epidemiology in child and adolescent psychiatry are limited. In conclusion, this present study aims to increase clinicians' awareness regarding the diagnosis and treatment of catatonia in child and adolescents. However, we need further studies in this field.

### KEYWORDS

Catatonia; child and adolescent; epidemiology; psychiatry clinic

[Abstract:0422] [Autism]

## Effects of riluzole and gabapentin on spatial learning, locomotor activity of anxiety and social behaviours in autism-like rat model

Sevcan Karakoç Demirkaya<sup>a</sup>, Cenk Orak<sup>b</sup>, Ferhat Şirinyıldız<sup>b</sup>, Gül Taşlı Yeşilçayır<sup>b</sup>, Gökhan Cesur<sup>b</sup> and Onur Ek<sup>b</sup>

<sup>a</sup>Department of Child and Adolescent Psychiatry, School of Medicine, Adnan Menderes University, Aydın, Turkey; <sup>b</sup>Department of Physiology, Adnan Menderes University School of Medicine, Aydın, Turkey

### ABSTRACT

**OBJECTIVE:** Autism spectrum disorder (ASD), has well-known symptoms of social/communication difficulties, self stimulatory and repetitive behaviours and narrow/overly focused interests that cause stress for all family, parents and individual. No gold standard pharmacotherapy is defined for this neurodevelopmental condition of complex origin. Hence, in this study, it is aimed to examine effects of riluzole, which is an ant glutamate

### KEYWORDS

Animal model; autism; gabapentin; riluzole; valproic acid

agent, and gabapentin (increases GABA biosynthesis and modulates the action of glutamate decarboxylase) on learning, anxiety and social behaviours in rat model of ASD.

**METHODS:** Depending on the animal model literature, on the 12.5th gestational day of Wistar albino rats, valproic acid was applied parenteral (for only rats not in negative control/naive intact group) to create autism-like model. Forty male rat pups divided into five equal groups; negative control, autism-like model nontreated, autism-like model + riluzole treated, autism-like model + gabapentin treated and autism-like model + gabapentin + riluzole treated ( $n = 8$ ). Riluzole (10 mg/kg/day *p.o.*) and Gabapentin (300 mg/kg/day *p.o.*) were administered via orogastric gavage in the 3rd postnatal week for 2 weeks. Behavioural test instruments were used; Morris water maze test for the investigation of learning, open field test for the assessment of anxiety and three-chamber sociability and social novelty test for assessment of social interaction were applied in the sixth postnatal week. Statistical analysis was conducted to compare all groups.

**RESULTS:** Three-chamber sociability test results; both sociability and social preference indices with strangers in the three-chamber social interaction test were significantly lower in the autism-like rats ( $p < .001$ ). Sociability index was significantly higher in the riluzole treated group ( $p < .001$ ) and social preference index higher in the riluzole treated, gabapentin treated and riluzole + gabapentin treated groups ( $p < .001$ ). In the open field test, riluzole treated group has significantly more rearing and spent significantly less time in periphery ( $p < .05$ ). In the Morris water maze test, the time spent at the quadrant which previously had had the escape platform was significantly higher in the riluzole group ( $p < .05$ ). This result showed that riluzole increases social interaction and spatial learning skill, also decreases anxiety level. However gabapentin has more limited effect than riluzole in the ASD-like rat model.

**CONCLUSIONS:** Our valproic acid-induced autism-like behaviours in rats was successful to provide an ASD model. All our results suggest that riluzole seems to have some possible positive effects on social interaction, anxiety level and spatial learning in an ASD-like rat model. Gabapentin, as a neuromodulator of GABA, limitedly effects on social behaviour. Further studies including detailed neuroimaging and biochemical investigations are needed to reveal how riluzole and gabapentin, together and separately, effects on ASD-like symptoms. These experimental findings would supply data for the clinical treatment options.

**Table 1.** Behavioural results of experimental groups.

	Sociability Index Mean $\pm$ SEM	Social Preference Index Mean $\pm$ SEM	Time Spent in Periphery Mean $\pm$ SEM	Rearing Mean $\pm$ SEM	Grooming Mean $\pm$ SEM	Morris Water Maze Mean $\pm$ SEM
Negative Control	2.013 $\pm$ 0.08362 ****	0.7838 $\pm$ 0.01700 ****	228.1 $\pm$ 3.875 *	25.38 $\pm$ 1.762 *	2.875 $\pm$ 0.7181 *	45.25 $\pm$ 3.494 *
Autism	1.108 $\pm$ 0.01065	0.1613 $\pm$ 0.01608	246.1 $\pm$ 6.846	18.88 $\pm$ 1.875 NS	5.500 $\pm$ 0.8660	33.63 $\pm$ 2.485 *
Autism+ Riluzole	1.361 $\pm$ 0.02622 ****	0.2913 $\pm$ 0.02445 ***	229.3 $\pm$ 3.104 *	23.50 $\pm$ 1.035 *	3.125 $\pm$ 0.7181 NS 3.000 $\pm$ 0.6547 *	46.13 $\pm$ 3.753
Autism + Gabapentin	1.133 $\pm$ 0.05554 NS	0.2550 $\pm$ 0.02646 **	244.4 $\pm$ 2.017 NS	20.25 $\pm$ 0.9210	3.000 $\pm$ 0.6547 *	28.88 $\pm$ 3.497 NS
Autism + Gabapentin + Riluzole	1.433 $\pm$ 0.03233 ****	0.300 $\pm$ 0.02252 ***	237.4 $\pm$ 2.427 NS	22.13 $\pm$ 1.481 NS	4.875 $\pm$ 0.9899 NS	30.13 $\pm$ 3.176 NS

Note: NS  $p > .05$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , \*\*\*\* $p < .0001$ .

[Abstract:0428] [Psychopharmacology]

## Involvement of adrenergic receptors to antihyperalgesic and antiallodynic effects of reboxetine in diabetic rats with neuropathic pain

Nazlı Turan Yücel, Özgür Devrim Can and Ümide Demir Özkay

Department of Pharmacology, Anadolu University, Eskişehir, Turkey

### ABSTRACT

**OBJECTIVE:** Reboxetine is a potent and selective noradrenaline reuptake inhibitory drug prescribed for the treatment of major depressive disorder in many countries. In our previous studies, we have shown the antihyperalgesic and antiallodynic effects of reboxetine in streptozotocin-induced diabetic rats and demonstrated the contribution of dopaminergic and  $\delta$ -opioidergic receptors to these effects. In this present study, we aimed to clarify further

### KEYWORDS

Adrenergic receptors; allodynia; diabetic neuropathy; hyperalgesia; reboxetine

underlying mechanism of actions; therefore, possible involvement of  $\alpha$ - and  $\beta$ -adrenergic receptors were examined in rats with diabetic neuropathic pain.

**METHODS:** Male Sprague-Dawley rats of the same age (250–300 g weight) were used for the experiments. Diabetes was induced by injecting a single dose of streptozotocin (50 mg/kg, *i.v.*) to the rats. Following the occurrence of nociceptive perception deficits in 4 weeks, reboxetine treatment (8 and 16 mg/kg for 14 days) was initiated and neuropathic pain parameters of the rats were evaluated by Randall-Selitto (mechanical hyperalgesia), dynamic plantar (mechanical allodynia), Hargreaves (thermal hyperalgesia) and warm plate (thermal allodynia) tests. Potential contribution of adrenergic system to the pharmacological effect of reboxetine were examined by using phentolamine (a non-selective  $\alpha$ -adrenoceptor antagonist, 5 mg/kg, *i.p.*) and propranolol (a non-selective  $\beta$ -adrenoceptor antagonist, 5 mg/kg, *i.p.*). Further, in order to clarify possible participation of  $\beta$ -adrenergic receptor subtypes to the presented effects,  $\beta_1$ -adrenoceptor antagonist metoprolol (15 mg/kg, *i.p.*),  $\beta_2$ -adrenoceptor antagonist ICI 118,551 (1.0 mg/kg, *i.p.*) and  $\beta_3$ -adrenoceptor antagonist SR 5923A (7.5 mg/kg, *i.p.*) were used. The experimental protocol was approved by the Osmangazi University Animal Experiments Local Ethics Committee.

**RESULTS:** Propranolol and ICI 118,551 administrations significantly antagonized the antihyperalgesic and antiallodynic effects of reboxetine. However, phentolamine, metoprolol and SR 5923A treatments did not cause any notable difference.

**CONCLUSIONS:** The antihyperalgesic and antiallodynic activities of reboxetine in neuropathic rats seem to be mediated by  $\beta_2$ , but not by  $\beta_1$ - or  $\beta_3$ -adrenoceptors. In addition,  $\alpha$ -adrenoceptors are not involved in the observed effects. All these preclinical findings indicate that reboxetine could exert its beneficial effects on neuropathic pain through different mechanisms and contribution of other endogenous systems should also be examined by further detailed studies.

[Abstract:0439] [OCD]

## Measurement of involuntary attention functions to social cues in patients with obsessive-compulsive disorder

Tahir Yıldız, Ferda Apa and Selim Tümkaya

Department of Psychiatry, Pamukkale University School of Medicine, Denizli, Turkey

### ABSTRACT

**OBJECTIVE:** Obsessive-compulsive disorder (OCD) is a common disease in the community and associated with loss of social function. This disease is typically characterized by recurrent intrusive thoughts or obsessions and repetitive behaviours or mental actions. OCD patients have more impaired social functions than healthy individuals, however, the mechanisms underlying impaired social functions have not been known in these patients. From the social signs such as point of gaze and body posture, the intentions under the behaviour of people can be understood. In order to achieve successful social relationships, it is necessary to interpret the rapidly changing social life spontaneously without using cognitive energy and to integrate these comments with the previous information. Despite this importance, no study has been conducted to measure spontaneous social functions in OCD patients.

**METHODS:** Using the caricature position that revealed differences between OCD and controls, eye movements of both groups were recorded, and fixations and fixation times were applied to the area of the faces (on the picture shown caricature a rectangle made using 0.18, 0.82 points and Y, 0.01, 0.34 points on the X axis was used) of both caricature. Therefore, subjects performed this test while eye movements were recorded with an eye tracking device. This instrument was simply used to mark the pupils with an infrared beam and record the coordinates of the pupil marked with a high-speed camera in motion. Then, when these coordinates were dropped on the subject that the subject was looking at, it was possible to calculate the time period in which the subject looked at the area of the picture. Both groups were compared in terms of number and duration of fixation on the face and circumference of the caricatures.

**RESULTS:** The OCD group consisted of 10 people, 6 male and 4 female, and the control group consisted of 11 people, 7 male and 4 female. There was no significant difference between the groups in terms of gender, age and education level (for all  $p < .05$ ). Patients with OCD had fewer (OCD mean:  $13.90 \pm 10.07$ , control mean:  $27.27 \pm 14.90$ ,  $p = .029$ ) and less time (OCD mean:  $3.18 \pm 2.80$ , control mean:  $6.70 \pm 4.21$ ,  $p = .051$ ) fixations to the facial areas of the caricatures than the controls. In case of the direction of gaze was incompatible with the posture, the mean effect of the gaze direction was significant ( $F(1,49) = 34.35$ ,  $p < .0001$ ,  $\eta p^2 = 0.41$ ). In other words, the participants perceived closer the caricatures which are facing each other than the caricatures facing oppositely. This effect was significantly stronger in OCD patients than in controls ( $F(1,49) = 4.24$ ,  $p = .045$ ,  $\eta p^2 = 0.080$ ). There was no significant correlation between YBOCS and Maudsley scale scores and test scores ( $p > .05$ ).

**CONCLUSIONS:** This study has shown that OCD patients have impaired spontaneous attention to detect social signs. Further studies are needed to determine if spontaneous attention disorders of OCD patients are only against social signs.

### KEYWORDS

Social signs; obsessive-compulsive disorder; involuntary attention; eye tracking

[Abstract:0500] [Psychopharmacology]

## Potential of atomoxetine against cognitive impairments: favourable effects on spatial cognition parameters of amnesic rats

Gülçin Emir<sup>a</sup> and Özgür Devrim Can<sup>b</sup><sup>a</sup>Department of Pharmacology, Institute of Health Sciences, Anadolu University, Eskişehir, Turkey; <sup>b</sup>Department of Pharmacology, Faculty of Pharmacy, Anadolu University, Eskişehir, Turkey

### ABSTRACT

**OBJECTIVE:** Investigating the anti-amnesic activity potential of atomoxetine, a selective noradrenaline reuptake inhibitory drug, was the aim of this present study.

**METHODS:** Adult male Sprague-Dawley rats weighing 250–300 g were used for the experiments. Experimental amnesia was induced by scopolamine injections (0.5 mg/kg, *i.p.*). Then, amnesic rats received atomoxetine treatment (3 and 6 mg/kg/day *i.p.*) for 14 days. Following the treatment protocol, spatial learning and memory capacities of the rats were assessed by Morris water maze (MWM) tests. Piracetam (300 mg/kg/day *p.o.*) was used as a reference drug. Moreover, motor coordination of the animals was evaluated in Rota-rod tests. The experimental protocol of this study was evaluated and approved by the Anadolu University Animal Experiments Local Ethics Committee.

**RESULTS:** In the MWM tests, escape latency values of untreated amnesic rats was significantly higher than that of control animals. On the other hand, amnesic rats receiving daily atomoxetine treatment at doses of 3 and 6 mg/kg (*i.p.*) have found the hidden platform faster than the untreated ones. Moreover, amnesic rats spent significantly less time in the target quadrant than those of controls. However, atomoxetine administrations induced significant enhancements in the target quadrant time of amnesic rats. Reference drug piracetam decreased the escape latency values but prolonged the target quadrant time of amnesic rats, as expected. In the Rota-rod tests, falling latencies of the animals were not altered by atomoxetine administrations.

**CONCLUSIONS:** Obtained findings indicated that atomoxetine treatment significantly improved the scopolamine-induced impairment in the spatial learning and memory capacities of rats. Moreover, this anti-amnesic effect was specific, since atomoxetine treatment did not alter the motor coordination parameters of animals. To the best of our knowledge, this is the first study presenting the therapeutic potential of atomoxetine in an experimental amnesia model. Nevertheless, anti-amnesic activity potential of this drug against cognitive disorders should be confirmed by further clinical trials.

### KEYWORDS

Amnesia; atomoxetine; Morris water maze; motor coordination

[Abstract:0504] [Psychopharmacology]

## Antinociceptive activity of tofisopam, an atypical anxiolytic drug, in mice

Özgür Devrim Can<sup>a</sup>, Umut İrfan Üçel<sup>b</sup>, Nazlı Turan Yücel<sup>a</sup> and Ümmühan Kandemir<sup>b</sup><sup>a</sup>Department of Pharmacology, Faculty of Pharmacy, Anadolu University, Eskişehir, Turkey; <sup>b</sup>Department of Pharmacology, Institute of Health Sciences, Anadolu University, Eskişehir, Turkey

### ABSTRACT

**OBJECTIVE:** Tofisopam is an anxiolytic drug marketed in several countries. Unlike classical 1,4-benzodiazepines, a 2,3-benzodiazepine compound tofisopam does not possess sedative, skeletal muscle relaxant, anticonvulsant, or amnesic properties. Although several studies have been conducted on the effects of tofisopam on central nervous system, therapeutic potential of this drug against pain has not been examined, so far. Therefore, we aimed to examine potential antinociceptive activity of tofisopam in mice, in the present study.

**METHODS:** Adult male Balb/c mice weighing 30–35 g were used for the studies. Hot-plate and tail-clip tests, measuring centrally organized responses to a noxious stimulus, were performed in order to examine antinociceptive potential of tofisopam. In addition, peripherally mediated antinociceptive effect was examined by acetic acid-induced writhing tests. Antinociceptive potential of tofisopam (at 25, 50 and 100 mg/kg doses) were compared with the reference drug morphine (10 mg/kg, *i.p.*). Rota-rod tests were performed for evaluating the motor coordination of animals. The experimental protocol of this study was approved by the Anadolu University Animal Experiments Local Ethics Committee.

**RESULTS:** Tofisopam, administrated at 50 and 100 mg/kg doses, significantly prolonged the reaction time of animals both in the tail-clip and hot-plate tests. Moreover, number of acetic acid-induced writhing behaviours was decreased with the same doses of this drug. In the Rota-rod tests, falling latencies of animals were not altered following the tofisopam treatments.

**CONCLUSIONS:** Obtained results pointed out that tofisopam at 50 and 100 mg/kg doses induce notable antinociceptive activity by affecting all of the supraspinal, spinal and peripheral nociceptive pathways. On the other hand, mechanisms underlying this antinociceptive action should be clarified with further detailed studies.

### KEYWORDS

Hot plate; tail clip; tofisopam; motor coordination; writhing test



[Abstract:0508] [Psychopharmacology]

## Effects of reboxetine on alterations of brain monoamine levels in diabetic rats

Saniye Özcan<sup>a</sup>, Nazlı Turan Yücel<sup>b</sup>, Murat Kozanlı<sup>a</sup> and Aysun Geven<sup>a</sup><sup>a</sup>Department of Analytical Chemistry, Anadolu University, Eskişehir, Turkey; <sup>b</sup>Department of Pharmacology, Anadolu University, Eskişehir, Turkey

### ABSTRACT

**OBJECTIVE:** Diabetes induces some alterations in levels and functions of various neurotransmitters in the central nervous system (CNS). Monoamines, having vital physiological roles on modulation of affect, cognition and behaviour, are among them. Thus, clarifying the potential effects of psychotropic drugs being used for the treatment of diabetic patients with mood disorders, on brain monoamine levels have a pharmacological significance. Therefore, we examined the effect of reboxetine, an antidepressant drug, on brain monoamine levels of diabetic rats.

**METHODS:** Adult male Sprague-Dawley rats (250–300 g) were used for the study. Diabetes was triggered by single *i.v.* administration of streptozotocin (50 mg/kg). After 4 weeks, diabetic rats were started to treat with two different doses of reboxetine (8 and 16 mg/kg). At the end of the two weeks treatment protocol, rats were sacrificed, brain tissues were dissected and were frozen as quickly as possible in liquid nitrogen. Following a conventional homogenization process, the resulting supernatant was removed and used for further analytical studies. Determinations of serotonin, noradrenaline and dopamine levels as well as their metabolites were performed by liquid chromatography (HPLC). The experimental protocol of this study was approved by the Anadolu University Animal Experiments Local Ethics Committee.

**RESULTS:** Results of the HPLC analysis indicated that diabetes-induced slight but not statistically significant decrease in the brain levels of serotonin and dopamine. In the reboxetine treated diabetic groups, levels of dopamine or its metabolites homovanillic acid (HVA), 3,4-dihydroxyphenylacetic acid (DOPAC) or 3-methoxytyramine were not different from the untreated diabetic animals. In addition, brain levels of serotonin and its primary metabolite 5-hydroxyindoleacetic acid (5-HIAA) tended to increase in the brain homogenates of reboxetine treated diabetic rats but these increases did not reach to significance. In addition, reboxetine treatments increased the noradrenaline concentration in the diabetic brains and the differences were significant at 16 mg/kg. Moreover, levels of 3-methoxy-4-hydroxyphenylglycol (MHPG), major metabolite of noradrenaline in the brain, were significantly increased in diabetics receiving 16 mg/kg dose of reboxetine for two weeks.

**CONCLUSIONS:** Obtained findings indicated that reboxetine induces some alterations in the brain monoamine levels of diabetic rats, which may affect the efficacy of this drug on various CNS-related disorders. Effects of this drug on brain noradrenaline and MHPG levels in diabetic rats probably related to its noradrenaline reuptake inhibitory properties. However, reboxetine-induced slight increases in the serotonin and 5-HIAA levels are interesting and should be examined by further studies.

### KEYWORDS

HPLC; metabolite; monoamine; reboxetine

[Abstract:0530] [ADHD]

## Interhemispheric motor cortex coherence and mirror movements in children with attention-deficit/hyperactivity disorder

Nurhan Erbil<sup>a</sup>, Halime Tuna Çak Esen<sup>b</sup>, Remzi Karaokur<sup>b</sup> and Ebru Çengel Kültür<sup>b</sup><sup>a</sup>Department of Biophysics, Hacettepe University School of Medicine, Ankara, Turkey; <sup>b</sup>Department of Child and Adolescent Psychiatry, Hacettepe University School of Medicine, Ankara, Turkey

### ABSTRACT

**OBJECTIVE:** EEG coherence assesses the synchronization of oscillatory cortical activity between two brain regions. If cortical oscillations are synchronized, high values of coherence arise. High values of coherence can be interpreted as an evidence of coactive neuronal populations, functional coupling of the regions involved in the tasks. Synchronization and coupling between sensory and motor areas evolve with age and motor learning and children with ADHD have increased intrahemispheric and interhemispheric coherences. To the best of our knowledge, this is the first study examining motor cortex coherence during a voluntary self-paced movement in children with ADHD.

**METHODS:** Fifteen right-handed boys, aged between 6 and 10 years with ADHD and age-sex-total IQ scores matched right-handed 15 healthy controls were included. Subjects were asked to perform voluntary/self-paced extension-flexion (EF) of the fingers II-V simultaneously with a slow-pace, avoiding fatigue as much as possible, without moving their wrists. The task was including at least 30 s self-paced finger EFs followed by again a 30 s rest. EEG was recorded

### KEYWORDS

Attention-deficit/hyperactivity disorder; motor coherence; EEG; mirror movement

for 5 min periods in order to minimize fatigue and distraction from the task. EMG was recorded from forearm muscles of the both arms by using differential channels. Data were analysed by using EEGLAB and MATLAB routines. In order to quantify amount of mirror movement in each trial, we used the ratio maximum amplitude of EMG when the hand was expected to be at rest to maximum amplitude of EMG when the corresponding hand was expected to be active.

**RESULTS:** Both in the ADHD and the control groups, C3–C4 coherence values i.e. the coupling between left and right M1s was higher during the left-hand movement. When the left-hand movement was analysed comparing the two groups, there was movement onset related coherence values were lower in healthy controls both for the alpha and beta bands. But when the right-hand movement was analysed comparing the two groups, coherence values were similar for the alpha band whereas higher in the ADHD group for the beta band.

**CONCLUSIONS:** In this study, we compared ADHD and healthy control children with respect to the preparation and execution of a voluntary internally paced movement. We preferred continuous movement since we also wanted to evaluate mirror movement in relation to the possible changes in cortical coherence as a part of continuation of the movement. Increase in mirror movements during the right-hand movement especially in the ADHD group with also an increase in alpha band coherence can be conjectured that the level callosal inhibition was lower for ADHD compared to healthy controls. In addition during the right-hand movement, the difference between the groups was prominent only at the beginning and the end of movement, and the coherence values were changed at the end of the movement for healthy controls.

[Abstract:0553] [Addictions]

## The evaluation of the relationship between internet addiction and problematic internet use in high school students

Chemengul Baylyeva

Department of Nursing, Zonguldak Bülent Ecevit University School of Health Sciences, Zonguldak, Turkey

### ABSTRACT

**OBJECTIVE:** The aim of this study is to determine the relationship between the internet usage status of high school students and the risky behaviours affecting adolescent life.

**METHODS:** The study was carried out at the health vocational high schools of the Ministry of National Education in Bakırköy and Bayrampaşa districts of Istanbul in between the dates of December 2015 and December 2016. The population of the study consisted of 2697 students studying in 25 health vocational high schools in Istanbul, Bakırköy and Bayrampaşa National Education Directorate. In the study, different socio-economic districts in Istanbul were selected and the schools in these districts were selected by simple random method. As a result of this selection; 1459 students who attend to the health vocational high schools were included in the sample. Personal Information Form, Young Internet Addiction Test Short Form and Problematic Internet Use Scale (PIUS) Form were administered as data collection tools.

**RESULTS:** In the study, age of the students was 32.5%, 16 years of age, 74.3% of them were girls, 93.9% of them had smart phones, 90.1% of those who connected to internet were home, 69%. The average internet usage scale total score of the students was found to be  $122.824 \pm 26.606$ , 8% of them used the internet every day, 53.4% of them used the internet to chat, and the total average of internet addiction scale was  $27.922 \pm 10.304$ . They used internet in a problematic way.

**CONCLUSIONS:** Control of access to and use of the Internet; introducing certain limitations; It is suggested that training activities should be carried out especially for the awareness of the teachers, parents and students about the harms of internet addiction.

### KEYWORDS

Internet addiction;  
problematic internet use;  
high schoolers

[Abstract:0615] [Schizophrenia and other psychotic disorders]

## Relationship between white matter abnormalities and cognition in schizophrenia

Cemre Erkol<sup>a</sup>, Virginie Anne Chouinard<sup>b</sup>, Talia Cohen<sup>b</sup>, Emily Ness<sup>b</sup>, Xiaoying Fan<sup>b</sup>, Fei Du<sup>b</sup> and Dost Öngür<sup>b</sup>

<sup>a</sup>Istanbul University Cerrahpasa School of Medicine, Istanbul, Turkey; <sup>b</sup>Psychotic Disorders Division, McLean Hospital, Harvard University, Belmont, MA, USA

**ABSTRACT**

**OBJECTIVE:** White matter abnormalities are one of the most common neuroimaging findings in patients with schizophrenia. Diffusion Tensor Spectroscopy (DTS) is an MRI modality that provides information on metabolite [e.g. N-acetyl aspartate (NAA)] diffusion within axons and Magnetization Transfer Ratio (MTR) provides information on brain myelin content. We previously reported abnormalities in both measures in the prefrontal white matter in schizophrenia patients. In this study, we aimed to examine the impact of these abnormalities on cognitive function. We hypothesized that cognitive measures (MATRICS and Stroop) would be correlated with prefrontal white matter abnormalities measured using MRI.

**METHODS:** We studied chronic stable patients with Schizophrenia/Schizoaffective disorder (SZ group) ( $n = 39$ ) who were taking medications and a healthy control (HC) group ( $n = 37$ ) between 18 and 49 years old. Participants completed a scan at our 4T Varian Scanner for NAA apparent diffusion coefficient (NAA ADC) and MTR measures. We used the MATRICS Composite score as an index of overall brain function and the Stroop Color-Word test score as an index of prefrontally dependent function. Participants were administered the Stroop and MATRICS tests on scan day.

**RESULTS:** We partially replicated our previous findings to show white matter abnormalities in SZ compared with HC, i.e. there was a significant elevation in NAA ADC in the SZ group ( $t(69) = -2.1, p = .038$ ). MTR was numerically lower in the SZ group, but this difference did not reach statistical significance. Patients performed significantly worse than controls in both MATRICS and Stroop testing. We observed significant correlations between MTR and cognitive measures in HC (for Stroop;  $r = 0.387, p = .029$ , for MATRICS;  $r = 0.363, p = .032$ ). We couldn't see this correlation in SZ group. We did not find significant correlations between NAA ADC and cognitive measures.

**CONCLUSIONS:** In this study, we demonstrate that both axon- and myelin-specific white matter abnormalities have functional implications as evidenced by correlation with cognitive measures. We do not see evidence for stronger correlation between a prefrontally dependent cognitive measure (Stroop) and our prefrontal white matter measures as compared with a whole-brain-dependent cognitive measure. These results may indicate that prefrontal white matter integrity is reflected more broadly in brain function.

**KEYWORDS**

Cognition; DTS; MTR; neuroimaging; schizophrenia

[Abstract:0642] [Schizophrenia and other psychotic disorders]

## The correlation of suicide attempt and suicide ideation with depression, insight, internalized stigma, and quality of life in patients with schizophrenia

Merve Bilgin Koçak<sup>a</sup> and Ahmet Rifat Şahin<sup>b</sup>

<sup>a</sup>Samsun Mental Health and Disorders Hospital, Samsun, Turkey; <sup>b</sup>Department of Psychiatry, Ondokuz Mayıs University School of Medicine, Samsun, Turkey

**ABSTRACT**

**OBJECTIVE:** The aim of this study is to examine the relationship between suicide attempts and ideation with depression, insight, internalized stigmatization and quality of life in patients with schizophrenia.

**METHODS:** Thirty-six suicide attempters and 52 not suicide attempters who were admitted to the psychiatry outpatient clinic of Ondokuz Mayıs University and diagnosed with schizophrenia according to DSM-5 diagnostic criteria were included in the study. Patients were then divided into two groups according to the score they obtained from the eighth item of the Calgary Schizophrenia Depression Scale (CSDS), which were not suicidal ideations (0 points) and suicidal ideations (1, 2 or 3 points). All of the patients who participated in the study were included in the study, sociodemographic information form, Positive and Negative Syndrome Scale (PANSS), Calgary Schizophrenia Depression Scale (CDSS), Schedule for Assessing the Three Component of Insight (SAI), The Quality of Life Scale for Schizophrenia Patients (QLSS), The Internalized Stigma of Mental Illness Scale (ISMIS) and the The Suicide Thought Scale (STS).

**RESULTS:** Patients with suicide attempts were more likely to be single, with lower quality of life and higher levels of internalized stigmatization. Patients with suicidal ideation had higher PANSS total scores, higher depressive symptom severity, lower quality of life and higher internalized stigmatization scores than those without suicidal ideation. There was no difference between the groups in terms of insight levels. There was a strong, positive correlation between STS and CSDS. There was a moderate, positive correlation between STS and PANSS, ISMI. It was determined that there was a moderate, negative correlation between STS and QLSS. After the regression analysis, depression was found to be a predictor of suicidal ideation.

**CONCLUSIONS:** Depression is a risk factor for suicide of schizophrenia. In order to prevent suicide in schizophrenia, factors that may cause depression should be carefully assessed.

**KEYWORDS**

Schizophrenia; depression; insight; internalized stigma; quality of life

[Abstract:801] [Others]

## Attitudes toward working mothers

Melike Donmez<sup>a</sup>, Esra Yazici<sup>b</sup>, Hazal Yavuzlar Civan<sup>c</sup>, Dilruba Dulgeroglu<sup>d</sup>, Esra Noyan<sup>e</sup> and Nazan Aydın<sup>f</sup>

<sup>a</sup>Department of Psychiatry, Pendik Training Hospital, Marmara University School of Medicine, Istanbul, Turkey; <sup>b</sup>Department of Psychiatry, Sakarya University School of Medicine, Sakarya, Turkey; <sup>c</sup>Bakırköy Mental and Neurological Diseases Research and Training Hospital, Istanbul, Turkey; <sup>d</sup>MD, Georgia, USA; <sup>e</sup>Eyüp Göktürk Family Health Center, Istanbul, Turkey; <sup>f</sup>Psychology Department, Uskudar University School of Humanities and Social Sciences, Istanbul, Turkey

### ABSTRACT

**OBJECTIVE:** In developing societies, unresolved problems related to women's place and rights have a significant effect in the field of mental health. One of the main issues in this regard is to define difficulties women will face after becoming a mother and steps to be taken to eliminate them. The aim of the study is to determine the attitudes of people towards working mothers and related factors in Turkey.

**METHODS:** A descriptive, online-survey research design was chosen to examine the attitudes of society. Link containing online survey was sent through the investigators' mail lists. Submitting the online survey constituted participants' consent to participate in the study. Attitudes toward working mothers scale which was developed by Aydın et al. and socio-demographic information form were used within the survey form.

**RESULTS:** A total of 1144 people participated in the survey, including 578 women and 566 men. Total score difference was statistically significant between the women and men, women showed lower scores which means more positive attitudes ( $p < .001$ ). It was seen that those whose mothers never work have higher scores in both total and subscale scores ( $p < .001$ ). The attitudes of working women are more positive than non-working women; but working men's attitudes are more negative than those who are not working at the same education levels ( $p < .005$ ). As the level of education increases, attitudes are getting more positive in both groups (Figure 1).

**CONCLUSIONS:** There can be many reasons which cause the educational level and attitude relationship, but it may be one of the reasons which was shown in literature as mothers from low-middle socioeconomic levels take less place in working life. The more negative attitudes of working men than non-working group is difference of the study from current literature. Considering the reasons behind this, present literature is mostly from the western countries and eastern culture is dominant in our society. The fact that the earnings of the males who do not work are often dependent on their spouses, which empowering them to have empathy, while the men with economic freedom, are independent from their spouses, may have been the driving force to have dominate over them and this can cause negative attitudes. Every improvement to support women who are willing to be involved in labour after postpartum period will be protective and curative in terms of well-being of both mothers and society. This study helps to understand and support mothers in workforce but there is need for further investigations.

### KEYWORDS

Maternity; attitudes; working women; labour

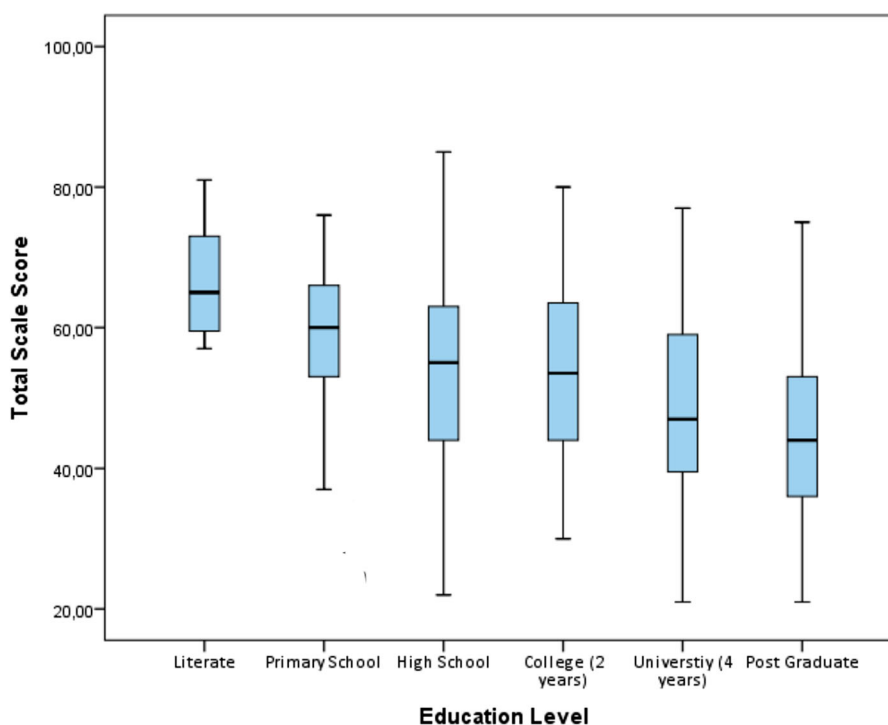


Figure 1. Educational level – attitudes score comparison.