Brullé, C., Bouchard, S., Rozova, A., 2009. Extended-release trazodone in major depressive disorder: a randomized, double-blind, placebo-controlled study. Psychiatry (Edgmont) 6 (5), 20-33.
[2] Zhang, L., Xie, W., Li, L., Zhang, H., Wang, G., Chen, D., Zhao, J., 2014. Efficacy and Safety of Prolonged-Release Trazodone in Major Depressive Disorder: A Multicenter, Randomized, Double-Blind. Flexible-Dose Trial. Pharmacology 94 (5-6), 199-206 doi:10.1159/000368559.
[3] Fagiolini, A., Albert, U., Ferrando, L., Herman, E., Muntean, C., Pálová, E., Kasper, S., 2020. A randomized, double-blind study comparing the efficacy and safety of trazodone once-a-day and venlafaxine extended-release for the treatment of patients with major depressive disorder. International Clinical Psychopharmacology 35 (3), 137-146 doi:10.1097/yic.0000000000000304.
[4] Beasley Jr, C.M., Dornseif, B.E., Pultz, J.A., Bosomworth, J.C., Sayler, M.E., 1991. Fluoxetine versus trazodone: efficacy and activating-sedating effects. The Journal of clinical psychiatry 52 (7), 294-299.
[5] Weisler, R.H., Johnston, J.A., Lineberry, C.G., Samara, B., Branconnier, R.J., Billow, A.A., 1994. Comparison of bupropion and trazodone for the treatment of major depression. Journal of clinical psychopharmacology 14 (3), 170-179.

doi: 10.1016/j.euroneuro.2020.09.547

P.745
Vortioxetine treatment elevates serum BDNF levels in MDD patients along with the improvement of cognitive and emotional characteristics

O. Troian, O. Levada

State Institution "Zaporizhzhia Medical Academy of Postgraduate Education Ministry of Health of Ukraine", Psychiatry Course, Zaporizhzhia, Ukraine

Background: Abnormal neuroplasticity in cerebral regions responsible for emotional and cognitive processing is considered as one of the key pathogenic mechanisms of major depressive disorder (MDD) [1]. It is associated with alterations in the expression of neurotrophic factors, such as brain-derived neurotrophic factor (BDNF) [2]. Thus, a reduction in peripheral BDNF levels has been reported in antidepressant-free individuals with MDD as compared to healthy controls (HC) [3], while an increase in peripheral BDNF levels has been observed under antidepressant treatment [4]. Nevertheless, data on the vortioxetine impact on this neurotrophin are scarce [5]. Therefore, we aimed to evaluate the influence of serum BDNF levels' decline on cognitive and emotional characteristics of MDD patients and to assess whether vortioxetine treatment affects BDNF levels and those characteristics.
Methods: 41 MDD patients (according to DSM-5) and 32 HC were included in this study. BDNF serum concentrations, psychopathological (MADRS, CGI) and neuropsychological parameters (PDQ-5, RAVLT, TMT-B, DSST) were analyzed in all subjects at admission and 30 MDD patients after eight weeks of vortioxetine treatment (10-20 mg per day). The statistical significance of between-group comparisons was determined using non-parametric and parametric criteria when appropriate. Spearman's correlational analysis was performed to explore the relationships between BDNF and clinical characteristics.
Results: At baseline, MDD patients had significantly lower serum BDNF levels compared to HC (727.6±87.9 pg/ml vs 853.0±93.9 pg/ml). Significant correlations were demonstrated between serum BDNF levels and MDD status (rs= -0.58, $p<0.01$), severity of current depressive episode (DE) (SGI-S: rs= -0.43, $p<0.01$; MADRS: r= -0.42, $p<0.01$), duration of DE (rs=-0.36, $p<0.01$), precipitating factors (rs=-0.34, $p<0.01$). Among psychopathological symptoms (MADRS), BDNF levels significantly correlated with *anxiety features* (rs= -0.45, $p<0.01$), *neurocognitive disturbances* (rs= -0.44, $p<0.01$), *anhedonia* ("inability to feel": rs= -0.42, $p<0.01$; "reduced appetite": rs= -0.42, $p<0.01$), *hypothymia* ("apparent sadness": rs= -0.42, $p<0.01$; "reported sadness": rs= -0.41, $p<0.01$), and *negative emotional cognitive distortions* (rs= -0.40, $p<0.01$). Correlations were also obtained between declined BDNF levels and worse subjective cognitive functioning (PDQ-5: rs= -0.29, $p<0.05$), performance of objective tests on working memory (RAVLT immediate recall: rs=0.30, $p<0.01$) and attention (TMT-B: rs= -0.26, $p<0.05$).

After eight weeks of treatment with vortioxetine, BDNF levels were significantly higher in post-treatment than pre-treatment (Table), moreover, they were higher than in HC ($F = 9.36$, $p = 0.003$). Vortioxetine significantly decreased the severity of DE and improved the performance of all cognitive tests.
Conclusions: Patients with active DE have significantly lower serum BDNF concentrations compared to HC. BDNF decline is associated with the severity and duration of DE, as well as the level of emotional and cognitive disturbances, predominantly attention and working memory. Serum BDNF levels normalize under vortioxetine treatment alongside with the enhancement of emotional state and cognition.

Parameters	Pre-treatment	Post-treatment
BDNF (pg/ml)	727.6 (87.9)[a]	905.3 (59.6)*
MADRS	29 (24.5-33)[b]	5 (2.5-10)*
CGI-S	4 (4-5)[b]	2 (1-3)*
PDQ-5 total score	7 (4-12.5)[b]	2 (1-4) *
RAVLT immediate recall	51 (45-54)[b]	69 (65-73)*
TMT-B	72.4 (23.0)[a]	45.4 (15.6)*
DSST	54 (45-61)[b]	62 (52-73)*

Data are presented as median (upper-lower quartile) or means (SD)
[a]Paired-samples t-test
[b]Wilcoxon test
*$p<0.0001$

Disclosure statement: O. Levada is a member of advisory and/or speaker boards of the following companies: Lundbeck, Pfizer, Acino. O. Troian gave presentations for Lundbeck and Acino.

References

[1] Boku, S., Nakagawa, S., Toda, H., Hishimoto, A., 2018. Neural basis of major depressive disorder: Beyond monoamine hypothesis. Psychiatry Clin. Neurosci. 72 (1), 3-12.

[2] Duman, R.S., 2004. Role of neurotrophic factors in the etiology and treatment of mood disorders. Neuromolecular Med 5 (1), 11–25.
[3] Levada, O.A., Cherednichenko, N.V., 2015. Brain-derived neurotrophic factor (BDNF): neurobiology and marker value in neuropsychiatry. Lik. Sprava 3-4, 15–25.
[4] Zhou, C., Zhong, J., Zou, B., Fang, L., Chen, J., Deng, X., et al., 2017. Meta-analyses of comparative efficacy of antidepressant medications on peripheral BDNF concentration in patients with depression. PLoS One 12 (2), e0172270.
[5] Yan, G., Zhang, M., Liu, Y., Yin, M., 2019. Efficacy of vortioxetine combined cognitive behaviour intervention therapy on brain-derived neurotrophic factor level on depressive patients. Psychogeriatrics 19 (5), 475–481.

doi: 10.1016/j.euroneuro.2020.09.548

P.748
Quetiapine's role as a maintenance treatment in bipolar disorder in adults

C. Pedro Fernandes [1], C. Martins [2], I. Pinto Ferreira [2], S. Peixoto [2]

[1] *Hospital de Braga, Psychiatry, Braga, Portugal*
[2] *University of Minho, School of medicine, Braga, Portugal*

Background: Bipolar disorder is a lifelong, chronic and highly recurrent mood disorder, characterized by episodes of mania (bipolar I subtype) or hypomania (bipolar II subtype) that alternate with episodes of major depression. While the best maintenance treatment for bipolar disorder has not yet been determined, lithium and quetiapine are the medications most commonly administered to patients with the disorder. Despite the standard use of quetiapine, its effectiveness as a maintenance treatment for Bipolar Disorder has not been sufficiently studied from a clinical standpoint.
Objectives: This paper offers a systematic literature review, aimed at assessing the benefits of quetiapine as a maintenance treatment for Bipolar Disorder, relative to the effects of a placebo or comparator oral medications, including mood stabilizers and antipsychotics, in adult patients. Given that the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the Canadian Network for Mood and Anxiety Treatments (CANMAT) were updated in 2013, we aim to summarize the findings of articles, dating from 2013 to the present, which studied quetiapine as a maintenance treatment for Bipolar Disorder.
Methods: Research was performed on PubMed, PsycINFO, Web of science and SCOPUS using selected keywords and predefined criteria. Twelve articles were selected and analyzed; their results were summarized in a table. The review was elaborated using the PRISMA checklist, and a critical appraisal tool from Critical Appraisal Skills Programme (CASP) was applied.
Results: The reviewed studies that compared quetiapine to a placebo concluded that quetiapine was more effective than a placebo in multiple ways, such as in decreasing patients' depressive symptoms. Quetiapine's use increased, which is due to its effectiveness, particularly in treating patients' more pervasive depressive symptoms of bipolar disorder. Moreover, in the maintenance phase, the dose of quetiapine should be adjusted according to patients' age, gender and most recent episode type. Regarding pregnant women with bipolar disorder, quetiapine may be effective in preventing new affective episodes during pregnancy and the postpartum period. While there are side effects to the drug, they have not proven to be a barrier to quetiapine's use, and, in one of the reviewed studies, they were even considered to be an efficacy factor.

Rate of treatment failure was higher for quetiapine, relative to lithium. Lithium is also superior to quetiapine as it relates to mean levels of symptoms in a 1-year follow-up after patients' first-episode mania and incidence of re-hospitalization and self-harm rates. However, combination treatment with quetiapine provides maintenance efficacy beyond the benefits conferred by either lithium or divalproex alone. The most common side effects in the quetiapine extended-release group were somnolence, increased appetite, dry mouth and dizziness.
Conclusions: Despite lithiumś greater effectiveness, we were able to conclude that the combination of quetiapine with lithium was superior to lithium in monotherapy. Therefore, we conclude that quetiapine plays a very important role in the maintenance treatment of bipolar disorder as a combination treatment.

No conflict of interest.

doi: 10.1016/j.euroneuro.2020.09.549

P.749
Astrocytes prime a synaptic pruning in the prefrontal cortex upon antidepressant treatment

E. Vivi [1], C. Román [1], A.M. Vogl [2], S.A. Giusti [2], E. Butz [2], I.D. Neumann [3], D. Refojo [2], R. Rupprecht [1], B. Di Benedetto [1]

[1] *University Hospital of Regensburg, Department of Psychiatry and Psychotherapy, Regensburg, Germany*
[2] *Max Planck Institute of Psychiatry, Department of Stress Neurobiology and Neurogenetics, Munich, Germany*
[3] *University Regensburg, Department of Neurobiology and Animal Physiology, Regensburg, Germany*

Background: Astrocytes are non-professional phagocytes, which engulf synapses to favour the remodelling of neuronal circuits. Major Depressive Disorder (MDD) is a complex psychiatric illness representing one of the leading causes of disability worldwide [1]. The heterogeneity of the clinical manifestations, as well as the different responses to therapies, have made it difficult to get a clear understanding of the disorder etiopathogenesis, thereby emphasizing the relevance of identifying novel disease trajectories [2]. MDD displays a disrupted synaptic communication and neuronal connectivity, which both suggest a putative role for astrocytes in its pathogenesis [2]. Astrocytes are an integral part of the synapse and control many aspects of synapse functioning, including the proper recognition, engulfment and degradation of redundant synapses through the multiple EGF-like domains protein 10 (MEGF10) pathway [3]. Accordingly, mice lacking MEGF10 astrocytes display about 50% re-