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Objectives The purpose of this study was investigating the effectiveness of rTMS (repetitive transcranial of magnetic stimulation) on increase social performance in patients with recurrent major depression.

Method It was used a quasi-experimental, pretest–posttest design with control group, a sample consisting of 32 patients who had depression on the basis of DSM-IV diagnostic criteria, SCID and BDI-II scales and were randomly assigned to two groups.

The experimental group underwent 20 sessions of rTMS as the independent factor and both groups (control & experimental) had 12-session psychotherapy and drugs treatment. Upon the intervention, both groups were tested with two tests (BDI-II & SASS). To determine the effect of the independent factor on the dependent factor of rTMS.

Data were analyzed by *t*-test.

Results The comparison between pre- & posttest of all the tests showed the reduction of signs & symptoms of depression, ($\alpha = 0/05$) (Beck scale $P \leq 0/001$ & $F = 30$) and increase social performance in participants ($P \leq 0/001$ & $F = 83$).

Conclusion The rTMS is effect in the reduction of signs & symptoms of depression and increase social functioning in recurrent major depression.

Keywords Social performance; Magnetic stimulation; Major depression

Disclosure of interest The authors have not supplied their declaration of competing interest.

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The research of electroconvulsive therapy effect on cognitive function in rats with depressive-like disorder formed by ultrasound

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Electroconvulsive therapy (ECT) is effective method of resistant depression treatment. ECT activates neurotransmitter systems, increases neurotrophic factors production, induces neurogenesis. Nevertheless, ECT side effects, expressed as temporary amnesia, limit its application in clinical practice.

The objective of our work was to estimate rat's memory after ECT in the behavioral test: "Object recognition", "Morris water-maze". The aim of the work was to research the effect of ECT on cognitive function in rats with depressive-like disorder and in normal rats.

Methods The research was conducted with Sprague-Dawley rats ($n = 41$, 2 month age). Experimental stages:

– control group ($n = 10$) compared to control + ECT group ([70 mA, 50 Hz, 500 μ sec; 10 days] $n = 10$);

– control group ($n = 9$) compared to group with depressive-like disorder, formed by ultrasound ([20–45 kHz; 21days] US, $n = 6$) and group with depressive-like disorder received ECT ($n = 6$).

Memory was estimated in the "Object recognition" and "Morris water-maze" tests.

Results (1) ECT did not decrease cognitive function in the "Object recognition" test in normal rats ($P = 0.1217$). Also, it did not lead to cognitive impairments in the "Morris water-maze" test: time of platform searching did not differ significantly from the control group ($P = 0.8573$).

(2) ECT produced recovering effect on memory impairments of the US group in the "Object recognition" test ($P = 0.0066$). In the "Morris water-maze" ECT decreased time of platform searching by 7 times compared to the US group ($P = 0.0025$). That demonstrates the absence of ECT negative effect on rat's memory.

Conclusion ECT does not produce negative effect on cognitive function in rats with depressive-like disorder and even recovers memory impairments.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Glucocorticoid activeness in patients with mitral valve prolapse and autonomic dysfunction

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Background Urgency of psychophysiological examination of mitral valve prolapse (MVP) patients is suggested by a high incidence of anxiety disorders among these patients.

Objectives To study glucocorticoid function activity and emotional stress resistance in MVP patients with autonomic dysfunction (AD).

Methods The trait anxiety level (TA) was assessed with the State-Trait Anxiety Inventory (Spielberger). Emotional stress resistance was undertaken with our modified version of Rosenzweig Picture-Frustration Test (Zinchenko, Pervichko). The cortisol level in blood plasma was measured by radioimmunoassay technique with radioimmune assay kit of cortisol in human blood plasma 'KORT-3N' (Belarus). There were 32 MVP patients (mean age was 28.5 ± 1.6 years) and 15 healthy people (mean age was 27.5 ± 1.3 years) who took part in the study.

Results Among reactions to frustration revealed by MVP patients the following categories are dominating: extrapunitive (E), ego-defensive (ED), and obstacle-dominance (OD). There was revealed a direct correlations: TA and E ($r = 0.49$, $P < 0.001$); TA and ED ($r = 0.46$, $P < 0.01$); TA and indexes of AD ($r = 0.43$, $P < 0.01$).

There was displayed a higher level of cortisol in MVP patients with severe grade of AD, against the level revealed by patients with average grade of AD (433.9 ± 78.0 mmol/L vs. 299.3 ± 42.9 mmol/L; $P < 0.05$). Direct correlations were established between the cortisol level and the level of TA ($r = 0.45$; $P < 0.01$); between the frequency of E-reactions in Modified Rosenzweig Test and cortisol level ($r = 0.42$; $P < 0.01$).

Conclusion Along with low stress resistance, registered AD and high level of TA, MVP patients reveal higher indexes of cortisol in blood plasma.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Life events, quality of life, autonomic nervous system, and cardiovascular risk factors

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