

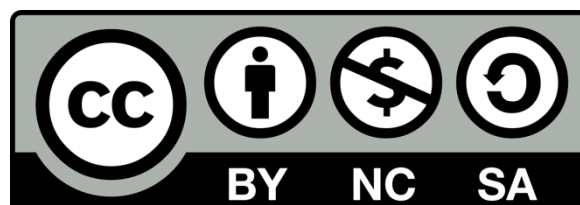
8TH LUBLIN INTERNATIONAL MEDICAL CONGRESS FOR STUDENTS AND YOUNG DOCTORS

LUBLIN, 18<sup>TH</sup> - 20<sup>TH</sup> NOVEMBER 2021

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STUDENTS' SCIENTIFIC SOCIETY  
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## **Placebo-controlled study of transcranial magnetic stimulation treatment influence on motor symptoms in patients with Parkinson's disease stage II.**

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**Introduction:** Modern principles of Parkinson's disease (PD) treatment include pharmacotherapy and non-drug methods, one of which is transcranial magnetic stimulation (TMS).

**Aim of the study:** to investigate influence of TMS treatment on motor symptoms of PD patients stage II using parameters of SPES SCOPA Motor Scale and motor evoked potential (MEP) latency.

**Material and methods:** Placebo-controlled study with 90 patients (51 women and 39 men) with PD stage II, which were divided in real-TMS and placebo-TMS treatment groups with 45 people in each. MEP was investigated to study the parameters of cortical excitability registering the muscular response in m. abductor pollicis brevis bilaterally. Clinical symptoms were appreciated by SPES SCOPA Motor Scale.

**Results:** The SPES SCOPA Motor Scale score in patients of the real-TMS group before treatment was 13.00 (10.00;17.00) points, and after treatment significantly decreased to 8.00 (6.00;10.00) points ( $p < 0.001$ ). In the placebo TMS group changes of SPES SCOPA Motor Scale score was insignificant ( $p = 0.25$ ) and amounted 13.00 (10.00;15.00) and 12.00 (10.00;14.00) points before and after treatment respectively. In the real-TMS group, there was a significant decrease in MEP latency in the right and left premotor cortex ( $p < 0.001$  and  $p < 0.001$ , respectively) after a course of TMS treatment. In the placebo-TMS group, changes of the MEP latency after TMS treatment wasn't significant in the right and left premotor cortex ( $p = 0.07$  and  $p = 0.11$ , respectively).

**Conclusions:** TMS treatment results to increasing of the premotor cortex excitability and decreasing of motor symptoms in patients with PD stage II.



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