

IMPULSIVITY AND COGNITIVE FLEXIBILITY AFTER TRAUMATIC BRAIN INJURIES IN VS OUTSIDE THE FRONTAL LOBE

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Objectives: Patients after traumatic brain injuries (TBIs) frequently show deficiencies in executive functioning, which are particularly accented in cases of frontal lobes (FL) injuries. The dysfunctions, often resulting from impaired cognitive control, may clinically manifest themselves as impulsivity and hampered cognitive flexibility. However, there is much controversy both in stating whether such dysfunctions are determined solely by the FL structures, as well as in revealing any relationship between impulsivity and cognitive flexibility, i.e., their possible mutual inter-twining. The aim of the study is to cast light on the two questions.

Participants & methods: 25 patients after TBI (21M, 4F) aged 17 to 64 years (mean=32; SD=14), either with FL injury (N=14) or brain lesions sparing FL (N=11) completed neuropsychological tasks of executive functions. Impulsivity was assessed by the Continuous Performance Test, the Tower of London and the Iowa Gambling Task on three measures (inability to inhibit incorrect responses, non-planning, tendency to risky decision-making). Several indices in the Wisconsin Card Sorting Test represented a measure of cognitive flexibility.

Results: Preliminary results do not confirm any major differences in tasks assessing impulsivity and cognitive flexibility between frontal and non-frontal TBI patients, which proposes a question of other brain structures participating in executive functioning. Secondly, almost no relation was found between measures of impulsivity and measures of cognitive flexibility, which suggests their mutual independence.

Conclusion: The results are discussed in light of recent research on executive functioning of patients after TBIs and will be used in the adjustment of the patients' rehabilitation process.