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The efficacy of Boswellic acids on cognition after traumatic brain injury: A double-blind, randomized, placebo-controlled clinical trial - Shakila Meshkat - Tehran University of Medical Sciences

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Introduction: Traumatic brain injury (TBI) is one of the most frequent causes of brain damage. In adults, TBI frequently results in impairments of cognitive functions which can lead to psychological consequences in the future. Boswellia acid (BA) is an anti-inflammatory agent with neuroprotective activity, which could markedly improve cognitive function. In this study, we aimed to evaluate the effect of BAs, a traditional herbal medicine, on cognitive function of patients with TBI.

Methods: This study was performed as a double-blind, randomized, placebo-controlled clinical trial on patients with TBI, who were in their 3 months to 3 years following injury. The patients were assigned to receive either placebo (group A, n=34) or BAs capsules (group B, n=46) for three months using blocked randomization. Cognitive function as a primary outcome was assessed by Rey Auditory Verbal Learning Test-Recognition Test (AVLT-R), Wechsler adult intelligence Digit Symbol Substitution Test (DSST) and trail-making test part B

(TMT-B) at baseline and three-month follow-up. Demographic data were collected and ANCOVA test was applied to analyze the effect of BAs.

Results: 80 patients were recruited in the study. Statistical analysis showed significant improvement in cognitive function between the BA group and placebo group based on AVLT-R-T1 (p value = 0.018), AVLT-R-T1 to T5 (p value = 0.001), AVLT-R-immediate recall (p value = 0.009), AVLT-R-delayed recall (p value=0.001), TMT-B (p value= 0.001), and DSST tests (p value=0.001).

Conclusion: BAs was safe and well-tolerated in patients with TBI. Based on our three-month follow-up results, prescribing BAs has a positive effect on the cognitive function of patients with TBI. However, further studies are needed to determine the clinical impact of these acids on TBI and their molecular mechanisms.