



A Randomized Controlled Trial of Neuroprotective Effects of N-Acetyl-Cysteine in Patients with Acute Ischemic Stroke

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Article Info	A B S T R A C T
Article type: Original article	Background and Aim: To investigate the neuroprotective effects of NAC (N-Acetyl-Cysteine) in patients with AIS (Acute Ischemic Stroke). Materials and Methods: The study was a single blind placebo controlled trial. 62 patients were enrolled in the study, 31 patients in each arm. NAC was infused for the intervention group with doses of 100 mg/kg stat on admission then 10 mg/kg/hour for 10 hours in addition to standard treatment. The control group only received standard treatment. The blood sample for measuring MMP-9 (Matrix Metalloproteinase 9) was collected from both groups before and 24 hours after receiving NAC. NIHSS (National Institutes of Health Stroke Scale) was calculated for both groups before therapy, 24 hours, 2 weeks, 1 month and 3 months after therapy. Results: Mean NIHSS in the intervention and control groups were 6.87±4.15 and 8.11±4.12 (p-value = 0.231) on admission, 4.52±3.82 and 5.87±4.36 (p-value = 0.193) 24 hours after admission, 3.06±2.74 and 4.93±4.69 (p-value = 0.061) 2 weeks later, 2.39±2.41 and 3.66±4.98 (p-value = 0.2 25) one month later, and, 1.07±2.12 and 2.36±2.28 (p-value = 0.511) 3 months later respectively, which were not statistically significant. Also, the relationship between MMP9 and NIHSS was evaluated using Pearson correlation coefficient. There was no significant correlation between MMP9 changes and neurological deficits in any of the time intervals. In both intervention and control groups, the amount of MMP9 24 hours after injection was decreased dramatically (p-value = 0.000) and showed that MMP9 reduction was not dependent on NAC injection. Conclusion: NAC injection did not show clinical and laboratory benefits in patients with AIS in addition to standard therapy.
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