

Memantine in Acute Nonarteritic Anterior Ischemic Optic Neuropathy

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Advantages:

To introduce the neuroprotective effect of Memantine (an NMDA type glutamatergic open-channel blocker) in visual functions of patients with acute NAION (Nonarteritic anterior ischemic optic neuropathy) and comparing it with placebo.

Methods:

Eligible eyes were randomly allocated to either Memantine tablets (5mg daily for first week and 10mg daily for the next two weeks) or placebo. Baseline visual acuity, pattern VEP (Visual Evoked Potential) and automated perimetry (SITA- standard C2- 24) were performed and repeated 3 weeks, 3 months and 6 months later except for VEP and perimetry which were repeated only at third month follow up.

Effectiveness / Safety:

After 3 weeks, 3 months and 6 months of treatment, BCVA improved -0.32 ± 0.40 , -0.51 ± 0.49 and -0.51 ± 0.49 LogMAR in Memantine group (Mem.) respectively and -0.027 ± 0.41 , -0.097 ± 0.60 and -0.051 ± 0.67 LogMAR in placebo group respectively ($P=0.023$, $P=0.029$ and $P=0.029$). VEP results demonstrated reduction of implicit time -8.32 ± 17.18 ms in Mem. Group after 3 months, whereas in placebo it increased $+5.7 \pm 21.6$ ms ($P=0.043$). Amplitude of VEP did not show a significant difference in Mem. group vs placebo ($P=0.083$). The effect of Memantine on visual field defect was not significantly different from that of placebo. ($P=0.275$) Treatment of acute NAION with Memantine resulted in significant improvement of BCVA after 3 weeks, 3 months and 6 months of follow up. VEP changes after 3 months of follow up may indicate improved transmission of impulses through optic nerve.