

# **NEUROPROTECTIVE EFFECT OF NEEM**

## **Overview**

Readers who have perused other sections of this data base will no doubt wonder why one study deserves its own chapter. How about sheer fear? Both of my grandmothers and my best friend's mother suffered strokes that made the end of their lives very difficult. While it's extremely complex, the report indicates that antioxidant compounds in neem helped to prevent brain damage in rats who had suffered a stroke by enhancing lipid peroxidation and increasing ascorbic acid (Vitamin C) in the brain. Rats pre-treated with neem seemed to complete standard tests, including a water maze, better than the control group and blood parameters were significantly improved over the untreated rats.

This study is experimental and has not been replicated as far as we know. Hopefully that will change and we'll see more studies in the near future.

## **Recent Research**

[Life Sci.](#) 2005 Feb 4;76(12):1325-38. Epub 2005 Jan 18.

### **Neuroprotective effect of *Azadirachta indica* on cerebral post-ischemic reperfusion and hypoperfusion in rats.**

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[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=15670613&query\\_hl=30&itool=pubmed\\_docsum](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15670613&query_hl=30&itool=pubmed_docsum)

We assessed the effect of *Azadirachta indica* (*A. indica*), a plant that has been reported to possess antioxidant, anti-inflammatory and anxiolytic properties, on cerebral reperfusion injury and long term cerebral hypoperfusion. When blood flow to brain region that has undergone critical period of ischemia is re-established, additional injury is to be expected from the reperfusion. In the present study, bilateral common carotid artery (BCCA) occlusion for 30 min followed by 45 min reperfusion resulted in increase in lipid peroxidation, superoxide dismutase (SOD) activity and fall in total tissue sulfhydryl (T-SH) groups. *A. indica* pretreatment (500 mg/kg/day x 7 days) attenuated the reperfusion induced enhanced lipid peroxidation, SOD activity and prevented fall in T-SH groups. Moreover, *A. indica* per se increased brain ascorbic acid level, which was unchanged during reperfusion insult. Long-term cerebral hypoperfusion induced by permanent BCCA occlusion has been reported to cause behavioral and histopathological abnormalities. In the present study, as tested by open field paradigm and Morris' water maze, a propensity towards anxiety and disturbances of learning/memory were observed in animals subjected to hypoperfusion for 2 weeks. *A. indica* (500 mg/kg/day x 15 days) significantly reduced these hypoperfusion induced functional disturbances. Reactive changes in brain histology like gliosis, perivascular lymphocytic infiltration, recruitment of macrophages and cellular edema following long term

hypoperfusion were also attenuated effectively by *A. indica*. We conclude that our study provides an experimental evidence for possible neuroprotective potentiality of *A. indica*. PMID: 15670613 [PubMed - indexed for MEDLINE]

*Most of this research data was compiled from the National Library of Medicine at the National Institutes of Health website ([www.pubmed.com](http://www.pubmed.com)) and is presented here as a service. Using Neem does not sell neem products.*