Diphenhydramine

A study was conducted to determine the protective effect of diphenhydramine (DPM) against TBI in experimental rats.

The effect of DPM was evaluated on the cerebral edema (CE) and neuronal degeneration after the induction of experimental brain injury in rats. The effect of DPM was also investigated on the inflammatory cytokines, for example, tumor necrosis factor-α and interleukin 1β and oxidative stress markers, such as malondialdehyde, superoxide dismutase, and glutathione peroxidase. Western blot analysis was used to investigate the effect of DPM on B-cell lymphoma 2 (Bcl-2), Bcl-2-associated X protein (Bax) and cleaved caspase-3.

Results of the study suggest that DPM causes reduction in CE and prevents neuronal degeneration. It also causes reduction in inflammation and oxidative stress in a dose-dependent manner. The level of Bax was found to be elevated, together with reduction in the Bcl-2 level in the DPM-treated group.

DPM exerts a neuroprotective effect after TBI via the attenuation of oxidative stress, inflammation, and mitochondrial apoptosis pathways [1)].

Gungor et al. reported video case reports of two patients with a diagnosis of CRPS type-I. Both patients exhibited similar presentation of unusual extrapyramidal motor response of the affected limb following lumbar sympathetic block. Both patients were treated with intravenous diphenhydramine to abort the extrapyramidal motor response.

Both patients similarly responded to treatment with intravenous diphenhydramine with abrupt resolution of the motor response.

Sympathetic blockade may interfere with the adaptive autonomic reflex circuits of the motor balance homeostasis in patients with complex regional pain syndrome. Disinhibition of extrapyramidal system may lead to immediate expression of extrapyramidal signs following the sympathetic block. Diphenhydramine, with its anti-histaminic and anticholinergic properties, may be effective in aborting such extrapyramidal signs, and should be considered as a treatment option in similar cases [2)].

1)
Pan W, Cao Z, Liu D, Jiao Y. Protective Effect of Diphenhydramine against Traumatic Brain Injury in Rats via Modulation of Oxidative Stress and Inflammation. Pharmacology. 2019 Sep 25:1-7. doi: 10.1159/000502767. [Epub ahead of print] PubMed PMID: 31553997.
2)
Gungor S, Aiyer R. Extrapyramidal signs occurring after sympathetic block for complex regional pain syndrome responding to diphenhydramine: Two case reports. Medicine (Baltimore). 2018 Jun;97(26):e11301. doi: 10.1097/MD.0000000000011301. PubMed PMID: 29953015; PubMed Central PMCID: PMC6039649.