Nimodipine

- Continuous Intravenous Nimodipine Infusion With Ethanol as Carrier in Aneurysmal Subarachnoid Hemorrhage Does Not Result in Measurable Cerebral Ethanol Levels
- Navigating the Diagnostic Maze: A Case Report and Narrative Review of Reversible Cerebral Vasoconstriction Syndrome
- Ershiwuwei Shanhu pills alleviates cerebral ischemia injury in rats by regulating endoplasmic reticulum stress through GRP78/XBP1/CHOP pathway
- Repetitive intraarterial therapy with Milrinone and Nimodipine for severe refractory Vasospasm: own series and narrative literature review
- Efficacy of Concurrent Utilization of Mannitol and Nimodipine in Treating Hypertensive Intracerebral Hemorrhage and Its Effects on Neurological Function
- Application of nimodipine combined with statins in the treatment of subarachnoid haemorrhage
- Intrathecal nicardipine for symptomatic, refractory vasospasm treatment in pediatric patients: a case series
- A novel straight-forward and affordable suction-irrigation device for microneurosurgery: A technical note

(Nimotop® - brand discontinued in U.S.): a Calcium channel blocker with preferential CNS action. Blocks dihydropyridine-sensitive (L-type) calcium channels, with a relatively selective vasodilatory effect on cerebral blood vessels.

Nimodipine has low oral bioavailability (2.7-27.9 percent), a short half-life (2 h), is highly protein bound (98-99 percent), and is hepatically metabolized [1)].

Nimodipine is well characterized for the management of subarachnoid hemorrhage and has been shown to promote a better outcome and less delayed ischemic neurological deficits.

In aneurysmal subarachnoid hemorrhage does not alter angiographic vasospasm, and there is no statistically significant difference in mortality. However, outcome is improved.

Rx: 60 mg P0 or per NG q 4 hrs (monitor BP) initiated within 96 hrs of SAH. Dosage is halved for liver failure. IV form is similarly effective where available. Administer either for 21 days or until the patient is discharged home in good neurological condition, whichever occurs first.

see also intraarterial nimodipine

Indications

Subarachnoid hemorrhage

see Nimodipine for subarachnoid hemorrhage.

Traumatic subarachnoid hemorrhage

see traumatic subarachnoid hemorrhage

Pregnancy

Nimodipine is potentially teratogenic in animals, the effect in humans is unknown. It should be used only when the potential benefit justifies the risk.

Subarachnoid haemorrhage in pregnancy is often the result of aneurysmal rupture or severe hypertension. A young woman with postpartum eclampsia and 'normal' blood pressure developed sudden-onset head pain, and was found to have minor biconvexity subarachnoid hemorrhages. Serial angiograms of the cervicocranial vessels revealed no evidence of aneurysm or arteriovenous malformation. A follow-up angiogram revealed diffuse vessel narrowing, consistent with postpartum angiopathy. Treatment consisted only of nimodipine for the prevention of vasospasm. The patient made an excellent recovery, without residual neurological deficits [2)].

Case reports

Al-Mufti et al. from the Rutgers New Jersey Medical School, describe a case of medically refractory Reversible cerebral vasoconstriction syndrome (RCVS) that required treatment with intra-arterial (IA) verapamil and subsequent nimodipine, resulting in both angiographic and clinical improvement after failing to respond to hemodynamic augmentation.

They also supplement a description of the case with a review of other case studies and case series in which IA calcium channel blockers were used to treat RCVS. They propose that the case they outline demonstrates that neurointerventional management with IA verapamil is appropriate and effective as an early intervention of medically refractory RCVS.

Using PubMed and Google Scholar, they performed a search of the English language literature with several combinations of the keywords “intra-arterial”, “calcium channel blockers”, “reversible cerebral vasoconstriction syndrome”, “RCVS”, “nimodipine”, “verapamil”, “milrinone”, and “nicardipine” to identify studies in which RCVS was treated with IA calcium channel blockers.

They identified eight case studies and case series that met our inclusion criteria. Eighteen patients are encompassed in these eight studies.

IA administration of calcium channel blockers has been shown to return cerebral vessels to their normal caliber in patients with medically refractory RCVS. However, there are no randomized controlled trials of the treatment of RCVS, and further studies are needed to elucidate the optimal treatment protocol for medically refractory RCVS [3)].

1)
Yasuda SU, Tietze KJ. Nimodipine in the treatment of subarachnoid hemorrhage. DICP. 1989 Jun;23(6):451-5. Review. PubMed PMID: 2662635.
2)
Moussouttas M, Abubakr A, Grewal RP, Papamitsakis N. Eclamptic subarachnoid haemorrhage without hypertension. J Clin Neurosci. 2006 May;13(4):474-6. PubMed PMID: 16678728.
3)
Al-Mufti F, Dodson V, Wajswol E, El-Ghanem M, Alchaki A, Nuoman R, Thabet A, Sutherland A, Roychowdhury S, Hidalgo A, Gupta G. Chemical angioplasty for medically refractory reversible cerebral vasoconstriction syndrome(). Br J Neurosurg. 2018 Sep 12:1-5. doi: 10.1080/02688697.2018.1479512. [Epub ahead of print] PubMed PMID: 30207193.