Calcium channel blocker

Amlodipine

Nifedipine

Calcium channel blocker neurosurgery Latest Pubmed Related Articles

- A Comparative Systematic Review and Meta-analysis of Amitriptyline with Propranolol and Flunarizine for the Prophylaxis of Migraine Headache
- 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
- Functional expression of the T-type Cav3.2 calcium channel in female and male human dorsal root ganglion neurons
- An observational study on comparison of dexmedetomidine and magnesium sulphate as adjuvants to bupivacaine for adductor canal block for postoperative analgesia in total knee replacement patients
- Comparative Outcomes of Combined Balloon Angioplasty and Intra-arterial Calcium Channel Blockers Versus Monotherapy for Cerebral Vasospasm Management: A Systematic Review and Meta-analysis
- Comparative Evaluation of analgesic efficacy of ketamine and magnesium sulfate as adjuvants to bupivacaine for scalp block in supratentorial Craniotomy: A Randomized, Double-Blind clinical study
- Efficacy of Magnesium Sulphate as an Adjunct to Lignocaine in Inferior Alveolar Nerve Block for Extraction of Mandibular Third Molar-A Split-Mouth Double-Blinded Randomized Controlled Trial

---

Calcium channel blockers (CCB), calcium channel antagonists or calcium antagonists are several medications that disrupt the movement of calcium (Ca^{2+}) through calcium channels.

Calcium channel blockers are used as antihypertensive drugs, i.e., as medications to decrease blood pressure in patients with hypertension. CCBs are particularly effective against large vessel stiffness, one of the common causes of elevated systolic blood pressure in elderly patients.

Calcium channel blockers are also frequently used to alter heart rate, to prevent cerebral vasospasm, and to reduce chest pain caused by angina pectoris.

N-type, L-type, and T-type voltage-dependent calcium channels are present in the zona glomerulosa of the human adrenal, and CCBs can directly influence the biosynthesis of aldosterone in adrenocortical cells, with consequent impact on the clinical treatment of hypertension with these agents.

CCBs have been shown to be slightly more effective than beta blockers at lowering cardiovascular mortality, but they are associated with more side effects.

Potential major risks however were mainly found to be associated with short-acting CCBs.

see Nicardipine.

Analysis suggests that several types of statins, calcium channel blockers, and angiotensin II receptor blockers are candidate drugs for the preventive treatment of unruptured intracranial aneurysms [1].

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 [2].

Intra-arterial Infusion of Calcium Channel Blocker

Intra-arterial Infusion of Calcium Channel Blocker.

1)
Shimizu K, Imamura H, Tani S, Adachi H, Sakai C, Ishii A, Kataoka H, Miyamoto S, Aoki T, Sakai N. Candidate drugs for preventive treatment of unruptured intracranial aneurysms: A cross-sectional study. PLoS One. 2021 Feb 12;16(2):e0246865. doi: 10.1371/journal.pone.0246865. PMID: 33577580.
2)
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.