NIMODIPINE

Indications/Uses

Listed in Dosage.

Dosage/Direction for Use

Adult : PO Prophylaxis of neurological deficit following subarachnoid haemorrhage 60 mg 4 hrly for 21 days beginning w/in 4 days of onset of haemorrhage. IV Ischaemic neurological deficits following subarachnoid haemorrhage Initial: 1 mg/hr for 2 hr, up to 2 mg/hr if no severe decrease in BP is observed. For <70 kg body wt or unstable BP: Initial: ≤0.5 mg/hr. Start treatment at once and continue for 5-14 days. Total duration should not exceed 21 days if patient has received oral treatment.

Dosage Details

Intravenous

Ischaemic neurological deficits following subarachnoid hemorrhage

Adult: Initially, 1 mg/hr infusion for 2 hr given via bypass into a central vein, increase to 2 mg/hr if no severe decrease in BP is observed. For <70 kg body wt or unstable BP: Initially, ≤0.5 mg/hr. Treatment is started at once and continued for 5-14 days. Total duration should not exceed 21 days if patient has received oral treatment.

Oral

Prophylaxis of neurological deficit following subarachnoid haemorrhage

Adult: 60 mg 4 hrly beginning w/in 4 days of onset of haemorrhage and continued for 21 consecutive days.

Hepatic Impairment

Oral:

Initially, 30 mg 4 hrly.

Intravenous:

Initially, ≤0.5 mg/hr.

Administration

Cap: Should be taken on an empty stomach. Take 1 hr before or 2 hr after meals.

Tab: May be taken with or without food. Take consistently, either always w/ or always w/o meals.

Incompatibility

Incompatible w/ some plastics, including polyvinyl chloride (PVC). It must not be added to an infusion bag or bottle, or be mixed w/ other drugs.

Contraindications

Use w/in 1 mth of MI or an episode of unstable angina. Concomitant use w/ potent CYP3A4 inhibitors (e.g. clarithromycin, ritonavir, ketoconazole, nefazodone).

Special Precautions

Patients w/ cerebral oedema or severely raised intracranial pressure. Contents of oral capsules should be given only by mouth or through a feeding tube. It must never be administered IV or by any other parenteral route. Hepatic impairment. Pregnancy and lactation.

Adverse Reactions

Hypotension, oedema, ECG abnormalities, palpitations, rebound vasospasm, flushing, fluid retention, lower abdominal discomfort or cramps, constipation, mental depression, headache, lightheadedness, dizziness, dyspnoea, muscle pain, thrombocytopenia, anaemia, rash, pruritus, haematoma, diaphoresis.

Pregnancy Category (US FDA)

PO: C

MonitoringParameters

Careful monitoring of BP and pulse rate.

Overdosage

Symptoms: Excessive peripheral vasodilation, systemic hypotension, tachycardia, bradycardia, GI complaints, nausea. Management: Symptomatic and supportive treatment. Admin of vasopressor may be necessary if significant hypotension occurs. IV Ca salts have been also used for hypotension.

Drug Interactions

Plasma concentration and efficacy may be significantly reduced when administered w/ strong CYP3A4 inducers (e.g. rifampicin, carbamazepine, phenobarbital, phenytoin). May increase serum levels and toxicity of phenytoin. Increased plasma concentrations w/ cimetidine or sodium valproate.

Potentially Fatal: Increased risk of significant hypotension w/ concomitant potent CYP3A4 inhibitors (e.g. clarithromycin, ritonavir, ketoconazole, nefazodone).

Food Interaction

Increased serum levels w/ grapefruit juice. Decreased serum levels w/ St John's wort.

Action

Description: Nimodipine inhibits inflow of Ca ions into cells by blocking Ca channels or select voltage-sensitive areas resulting in relaxation of vascular smooth muscle and myocardium during depolarisation. Nimodipine has greater action on the cerebral vessels because of its high lipophilicity.

Pharmacokinetics:

Absorption: Rapidly absorbed from the GI tract. Bioavailability: Approx 13%. Time to peak plasma concentration: 1 hr.

Distribution: Crosses blood-brain barrier but concentrations in CSF are lower than those in plasma. Plasma protein binding: >95%.

Metabolism: Hepatically metabolised via CYP3A4 isoenzyme. Undergoes extensive first-pass metabolism.

Excretion: In faeces via bile, via urine (as metabolites). Terminal half-life: Approx 9 hr.

Storage

Store between 15-30°C. Protect from light.

MIMS Class

Peripheral Vasodilators & Cerebral Activators