NIMOTOP®

Infusion Solution

Important information, please read carefully!

Composition

1 bottle of 50 mL solution contains 10 mg nimodipine 50 mL alcoholic solvent.
ATC code: C08CA06

Properties

PHARMACODYNAMIC PROPERTIES
Nimodipine has a predilective cerebral antivasoconstrictive and antiischaemic activity.
Vasoconstrictions provoked in vitro by various vasoactive substances (e.g. serotonin, prostaglandins, and histamine) or by blood and blood degradation products can be prevented or eliminated by nimodipine.

Nimodipine also has neuropharmacological and psychopharmacological properties.
Investigations in patients with acute cerebral blood flow disturbances have shown that nimodipine dilates the cerebral blood vessels and promotes cerebral blood flow.

The increase in perfusion is as a rule greater in previously damaged or underperfused brain region than in healthy regions.

The ischaemic neurological damage in patients with subarachnoid haemorrhage and the mortality rate are significantly reduced by nimodipine.

PHARMACOKINETIC PROPERTIES
Absorption
The orally administered active substance nimodipine is practically completely absorbed.

The peak plasma concentration and the area under the curve increase proportionally to the dose up to the highest dose under test (90 mg).

The distribution volume (Vss, 2-compartment model) for i.v. administration is calculated to be 0.9 - 1.6 l/kg body weight.
The total (systemic) clearance is 0.6 - 1.9 l/h/kg.

Protein binding and distribution
Nimodipine is 97 - 99 % bound to plasma proteins.

Metabolism, elimination and excretion
Nimodipine is eliminated metabolically via the cytochrome P450 3A4 system,

Bioavailability
Attributed to the extensive first-pass metabolism (about 85 - 95 %) the absolute bioavailability is 5 - 15 %.

Preclinical safety data

Preclinical data reveal no special hazard for humans based on conventional studies of single and repeated dose toxicity, genotoxicity, carcinogenicity and male and female fertility. In pregnant rats, doses of 30 mg/kg/day and higher inhibited foetal growth and resulted in reduced foetal weights. At 100 mg/kg/day embryolethality occurred. No evidence of teratogenicity was observed. In rabbits, no embryotoxicity and teratogenicity occurred at doses up to 10 mg/kg/day. In one peri-postnatal study in rats, mortality and delayed physical development were observed at doses of 10 mg/kg/day and higher. The findings were not confirmed in subsequent studies.

Therapeutic indications

Prophylaxis and treatment of ischaemic neurological deficits caused by cerebral vasospasm following subarachnoid haemorrhage of aneurismal origin.

DISETUJUI OLEH BPOM: 06/11/2025 ID: EREG100366VR12400092

Dosage and method of administration

Dosage and method of administration

Unless otherwise prescribed, the following dose guidelines are recommended.

Intravenous infusion
At the beginning of treatment 1 mg/h nimodipine (= 5 mL Nimotop solution for infusion/h) for 2 h (about 15 µg/kg body weight/h).

If this is well tolerated, and particularly if there is no marked reduction in blood pressure, the dose is increased after 2 h to 2 mg/h nimodipine (= 10 mL Nimotop solution for infusion/h) (about 30 µg/kg body weight/h).

Patients whose body weight is appreciably below 70 kg or who have labile blood pressure should be started with a dose of 0.5 mg/h nimodipine (= 2.5 mL Nimotop solution for infusion/h).

Intracisternal Installation
During surgery a freshly prepared dilute solution of nimodipine (1 mL Nimotop solution for infusion and 19 mL Ringer's solution) warmed up to blood temperature may be instilled intracisternally.

This dilute solution of Nimotop solution for infusion must be used immediately after preparation.

Method of administration
Nimotop solution for infusion is administered as a continuous i.v. infusion via a central catheter using an infusion pump.

It should be given via a three-way stopcock together with either glucose 5 %, sodium chloride 0.9 %, lactated Ringer's solution, lactated Ringer's solution with magnesium, dextran 40 solution or HAES ® (poly(O-2-hydroxyethyl) starch 6 % in a ratio of about 1:4 (Nimotop:co-infusion).

Also mannitol, human albumin or blood are suitable for co-infusion.

The three-way stopcock should be used to connect the Nimotop polyethylene tube with the co-infusion line and the central catheter.

Nimotop solution for infusion must not be added to an infusion bag or bottle and must not be mixed with other drugs.

Administration of Nimotop solution for infusion should be continued during anaesthesia, surgery and angiography.

Duration of administration
PROPHYLACTIC USE
Intravenous therapy should be started no later than 4 days after the haemorrhage, and be continued during the period of maximum risk of vasospasm, i.e. up to 10-14 days after the subarachnoid haemorrhage.

If during prophylactic administration of Nimotop solution for infusion, the source of the haemorrhage is treated surgically, intravenous treatment with Nimotop solution for infusion should be continued post-operatively for at least 5 days.

After the end of the infusion therapy, it is advisable to continue with oral administration of 6 x 60 mg nimodipine daily at four-hourly intervals for about a further 7 days.

THERAPEUTIC USE
If ischaemic neurological disturbances caused by vasopasm after aneurysmal subarachnoid haemorrhage are already present, treatment should be started as early as possible and be continued for at least 5 days up to a maximum of 14 days.

Thereafter, oral administration of 6 x 60 mg nimodipine/day per day at four-hourly intervals for 7 days is recommended.

If during therapeutic administration of Nimotop solution for infusion, the source of the haemorrhage is treated surgically, intravenous treatment with Nimotop solution for infusion should be continued post-operatively for at least 5 days.

Contraindications

Nimotop solution for infusion must not be used in cases of hypersensitivity to nimodipine or to any of the excipients.

Special warnings and special precautions for use

Although treatment with Nimotop has not been shown to be associated with increases in intracranial pressure, close monitoring is recommended in these cases or when the water content of the brain tissue is elevated (generalized cerebral oedema).

Caution is required in markedly hypotensive patients (systolic blood pressure < 100 mm Hg).

In patients with unstable angina or within the first 4 weeks after acute myocardial infarction, physicians should consider the potential risk (e.g. reduced coronary artery perfusion and myocardial ischemia) versus the benefit (e.g. improvement of brain perfusion).

This medicinal product contains 23.7 vol% ethanol (alcohol), i.e. up to 50 g per daily dose (250 ml). This may be harmful for those suffering from alcoholism or impaired alcohol metabolism and should be taken into account in pregnant or breast-feeding women, children and high-risk groups such as patients with liver disease, or epilepsy.

The amount of alcohol in this medicinal product may alter the effects of other medicines (see “Interaction with other medicinal products and other forms of interaction”).

Interaction with other medicinal products and other forms of interaction

Drugs that affect nimodipine

Fluoxitine
The steady-state concomitant administration of nimodipine with the antidepressant fluoxetine led to about 50% higher nimodipine plasma concentrations. Fluoxetine exposure was markedly decreased, while its active metabolite norfluoxetine was not affected.

Nortryptyline
The steady-state concomitant administration of nimodipine and nortriptyline led to a slight decrease in nimodipine exposure with unaffected nortriptyline plasma concentrations.

Effects of nimodipine on other drugs
Blood pressure lowering drugs
Nimodipine may increase the blood pressure lowering effect of concomitant applied anti-hypertensives, such as:

- diuretics,
- α-blockers,
- ACE inhibitors,
- A1-antagonists,
- other calcium antagonists
- α-adrenergic blocking agents,
- PDE5 inhibitors,
- α-methyldopa.

However, if a combination of this type proves unavoidable particularly careful monitoring of the patient is necessary.

Simultaneous intravenous administration of β -blockers may lead to mutual potentiation of negative inotropic action going as far as decompensated heart failure.

Renal function can deteriorate if potentially nephrotoxic drugs (e.g. aminoglycosides, cephalosporins, frusemide) are given simultaneously, and also in patients whose renal function is already impaired. Renal function must be monitored carefully in such cases, and if a deterioration is found discontinuation of the treatment should be considered.

Zidovudine
In a monkey study simultaneous administration of anti-HIV drug zidovudine i.v. and nimodipine bolus i.v. resulted for zidovudine in significantly higher AUC, whereas the distribution volume and clearance were significantly reduced.

Other forms of interaction
Since Nimotop solution for infusion contains 23.7 % vol-% of alcohol, interactions with alcohol-incompatible drugs should be taken into consideration (see “Special warnings and precautions for use”).

Pregnancy & Lactation

Pregnancy:
There are no adequate and well controlled studies in pregnant women.

If Nimotop infusion solution is to be administered during pregnancy, the benefits and the potential risks must therefore be carefully weighted according to the severity of the clinical picture.

Lactation
Nimodipine and its metabolites have been shown to appear in human milk at concentrations of the same order of magnitude as corresponding maternal plasma concentrations. Nursing mothers are advised not to breastfeed their babies when taking the drug.

Fertility
In single cases of in-vitro fertilization calcium antagonists have been associated with reversible biochemical changes in the spermatozoa`s head section that may result in impaired sperm function.

Effects on ability to drive and use machines

In principle the ability to drive and use machines can be impaired in connection with the possible occurence of dizziness. In case of using Nimotop infusion solution, this influence will not be of importance.

Undesirable effects

Adverse drug reactions (ADRs) based on clinical trials with nimodipine in the indication aSAH
sorted by CIOMS III categories of frequency (placebo-controlled studies: nimodipine N = 703;
placebo N = 692; uncontrolled studies: nimodipine N = 2496; status: 31 Aug 2005) are listed below:
The frequencies of ADRs reported with nimodipine are summarized in the table below. Within each frequency grouping, undesirable effects are presented in order of decreasing seriousness.
Frequencies are defined as:
very common (≥ 1/10),
common (≥ 1/100 to < 1/10),
uncommon (≥ 1/1,000 to < 1/100),
rare (≥ 1/10,000 to < 1/1,000),
very rare (< 1/10,000).

Table 01: ADR

System Organ Class (MedDRA)	Uncommon	Rare
Blood and the lymphatic system disorders	Thrombocytopenia	
Immune system disorders	Allergic reaction Rash	
Nervous system disorders	Headache	
Cardiac disorders	Tachycardia	Bradycardia
Vascular disorders	Hypotension Vasodilatation	
Gastrointestinal disorders	Nausea	Ileus
Hepato-biliary disorders		Transient increase in liver enzymes
General disorders and administration site conditions		Injection and infusion site reactions Infusion site (thrombo-) phlebitis

Reporting of Suspected adverse drug reaction
Reporting suspected adverse reaction after product authorization is crucial for on-going benefit-risk monitoring. Healthcare professionals are requested to report any suspected adverse reactions to PT Bayer Indonesia through email at drugsafety@bayer.com.

Overdose

Symptoms of intoxication
Symptoms of acute overdosage to be anticipated are marked lowering of the blood pressure, tachycardia or bradycardia, and (after oral administration) gastrointestinal complaints and nausea.

Treatment of intoxication
In the event of acute overdosage treatment with Nimotop solution for infusion must be discontinued immediately.

Emergency measures should be governed by the symptoms.
If the substance was ingested orally, gastric lavage with addition of charcoal should be considered as an emergency therapeutic measure.

If there is a marked fall in blood pressure, dopamine or noradrenaline can be administered intravenously.

Since no specific antidote is known, subsequent treatment for other side effects should be aimed at the most prominent symptoms.

Presentation

Box, bottle 50 mL

Excipients

Ethanol 96%
Macrogol 400
Sodiuem citrate
Citric acid anhydrous
Water of injection

Instruction for use/handling :

Storage
Store below 25ºC
Protect from direct sunlight if the bottle is removed from the carton.

Keep the drug out of reach of children

Harus dengan resep dokter

Reg. No. DKI9051600149A1

Made by Solupharm Pharmazeutische Erzeugnisse GmbH, Melsungen
Released by Bayer AG, Leverkusen – Germany
Imported by PT Bayer Indonesia, Jakarta – Indonesia

LEMBAR INFORMASI UNTUK PASIEN

Larutan Infus Nimotop® 0,02%
Nimodipin

Bacalah seluruh isi brosur ini dengan saksama sebelum mulai menjalani perawatan dengan obat ini karena terdapat informasi yang penting bagi Anda.

Simpan brosur ini. Anda mungkin memerlukannya nanti.

Jika ada pertanyaan lebih lanjut, tanyakan kepada dokter atau apoteker Anda.

Obat ini telah diresepkan khusus untuk Anda. Jangan berikan kepada orang lain. Hal ini dapat membahayakan mereka meskipun mereka memiliki gejala penyakit yang sama dengan Anda.

Jika Anda mengalami efek samping apa pun, konsultasikan dengan dokter atau apoteker. Termasuk juga kemungkinan efek samping yang tidak tercantum dalam brosur ini.

Isi brosur ini

1.Penjelasan tentang larutan infus Nimotop dan kegunaannya

Larutan infus Nimotop adalah obat yang mengandung Nimodipine 10 mg. Nimotop digunakan untuk mencegah dan mengobati defisit neurologis (fungsi neurologis yang menurun/tidak normal) akibat vasospasme (penyempitan pembuluh darah) setelah terjadinya perdarahan subaraknoid yang berasal dari aneurisma (penonjolan pada dinding pembuluh darah).

2. Hal yang perlu diketahui sebelum menjalani pengobatan dengan larutan infus Nimotop

Jangan jalani pengobatan dengan larutan infus Nimotop:

- **Jika Anda mengalami serangan jantung** dalam sebulan terakhir.
- **Jika Anda alergi terhadap nimodipin** atau bahan lain yang terkandung dalam obat ini (tercantum dalam bagian 6).

Beri tahu dokter dan jangan Jalani pengobatan dengan larutan infus Nimotop jika salah satu kondisi tersebut berlaku bagi Anda.

Peringatan dan tindakan pencegahan

Konsultasikan dengan dokter atau apoteker sebelum menjalani pengobatan dengan larutan infus Nimotop:

- **Jika terdapat cairan dalam otak Anda atau terjadi peningkatan tekanan yang parah dalam tengkorak Anda**. Dokter akan dapat memberikan saran lebih lanjut kepada Anda.

- **Jika Anda menderita tekanan darah rendah.** Tekanan darah Anda mungkin perlu diperiksa secara rutin.
- **Jika Anda menderita penyakit hati**.
- Jika anda mengalami nyeri dada yang tidak stabil atau dalam 4 minggu pertama setelah serangan jantung akut. Dokter harus mempertimbangkan potensi risiko (misalnya aliran darah ke jantung bisa berkurang sehingga menyebabkan menurunnya fungsi jantung) lebih besar daripada manfaatnya (misalnya peningkatan aaliran darah ke otak bisa lebih lancar).
- **Jika Anda rentan terhadap alkohol**.

Beri tahu dokter sebelum mengonsumsi tablet Nimotop jika salah satu kondisi tersebut berlaku bagi

Interaksi larutan infus Nimotop dengan obat-obatan lain

Anda tidak boleh diresepkan injeksi obat yang termasuk dalam golongan penghambat beta (penurun tekanan darah) jika sudah menjalani pengobatan dengan larutan infus Nimotop.

Beri tahu dokter jika Anda sedang mengonsumsi, baru-baru ini mengonsumsi, atau mungkin akan mengonsumsi obat apa pun lainnya. Sangat penting bagi Anda untuk memberi tahu dokter jika Anda sedang mengonsumsioabt berikut:

- **Tablet untuk tekanan darah tinggi** termasuk golongan obat antidiuretik, beta bloker, ACE inhibitor, antagonis reseptor angiotensin I, antagonis kalsium lainnya, alfa-adrenergic bloker, penghambat PDE5, dan alfa-metildopa. Larutan infus Nimotop dapat meningkatkan efek obat-obatan tersebut.
- Obat antidepresan fluoksetin.
- Obat yang membahayakan ginjal **(obat nefrotoksik)** seperti aminoglikosida, sefalosporin, dan furosemida. Dokter akan memantau fungsi ginjal Anda selama pengobatan.
- Obat **anti-HIV zidovudin** (AZT).
- Obat-obatan lainnya yang sedang Anda konsumsi **dengan khasiat yang mungkin berubah akibat kandungan alkohol dalam larutan infus Nimotop**. Dokter akan mengenali obat-obatan ini.
- **Nortriptilin :** pemberian nimodipin dan nortriptilin secara bersamaan dalam kondisi steady state (konstan) menyebabkan sedikit penurunan paparan nimodipin, namun tidak memengaruhi konsentrasi plasma nortriptilin.

Kehamilan, menyusui, dan kesuburan

Jika Anda sedang hamil atau menyusui, menduga bahwa Anda mungkin hamil, atau berencana hamil, konsultasikan dengan dokter sebelum menjalani perawatan dengan obat ini. Ikuti instruksi dokter dengan saksama.

Jangan menyusui selama menjalani pengobatan dengan larutan infus Nimotop.

Jika Anda adalah pria yang sedang mengikuti program untuk mempunyai keturunan, konsultasikan hal ini dengan dokter. Obat seperti larutan infus Nimotop kadang dapat berdampak pada kesuburan pria.

Mengemudi dan mengoperasikan mesin

Larutan infus Nimotop dapat menyebabkan kewaspadaan Anda berkurang, atau pusing. Jangan mengemudi atau mengoperasikan mesin jika Anda mengalami efek samping ini. Kandungan alkohol dalam larutan infus juga dapat menyebabkan kewaspadaan Anda berkurang.

Namun dalam pengunaan Nimotop infus, hal ini tidak terlalu signifikan atau mengganggu

Larutan Infus Nimotop mengandung etanol

Obat ini mengandung etanol (alkohol) (23,7 % volume) sekitar 50 g per dosis harian (250 mL). Hal ini dapat berbahaya bagi pasien yang mengalami kecanduan alkohol atau gangguan metabolisme alkohol dan juga harus diperhatikan untuk wanita hamil atau menyusui, anak-anak dan kelompok pasien dengan risiko tinggi seperti yang mempunyai penyakit hati atau epilepsi.

Kandungan alkohol dalam obat ini dapat menyebabkan perubahan efek obat lain (lihat "Interaksi dengan obat lain dan bentuk interaksi lain").

3. Cara pengobatan dengan larutan infus Nimotop

Larutan infus Nimotop diberikan oleh dokter atau perawat, dalam bentuk infus dengan kecepatan lambat melalui pembuluh darah vena hingga masuk ke dalam aliran darah

Dosis yang dianjurkan adalah 5 mL per jam selama dua jam pertama pengobatan. Setelah itu, dosis ditingkatkan menjadi 10 mL per jam jika tidak ada tanda-tanda penurunan tekanan darah.

Pengobatan akan berlangsung selama minimal 5 hari, dan maksimum 14 hari. Setelah terapi intravena, Anda mungkin diresepkan tablet Nimotop selama periode waktu tertentu. Namun, total durasi pengobatan dengan nimodipin (larutan infus Nimotop dilanjutkan dengan tablet Nimotop) tidak boleh melebihi 21 hari.

Jika berat badan Anda kurang dari 70 kg atau **tekanan darah Anda tidak stabil**, dokter akan menghitung dosis larutan infus Nimotop yang sesuai bagi Anda.

Jika Anda diberikan larutan infus Nimotop melebihi dosis yang disarankan

Dosis larutan infus Nimotop yang diberikan kepada Anda dikontrol dengan hati-hati oleh dokter. Kecil kemungkinan Anda diberikan obat melebihi dosis yang disarankan.

Beri tahu dokter jika Anda merasa lemas atau jika jantung Anda berdetak lebih lambat atau lebih cepat daripada biasanya.

Jika Anda memiliki pertanyaan lebih lanjut tentang penggunaan obat ini, tanyakan kepada dokter atau apoteker.

4. Kemungkinan efek samping

Seperti obat pada umumnya, obat ini dapat menimbulkan efek samping pada sebagian orang.

Kemungkinan efek samping serius

Jika Anda mengalami:

- tanda-tanda reaksi alergi, seperti ruam
- tekanan darah rendah (dapat menyebabkan pusing)
- detak jantung lambat
- lebih mudah memar dan berdarah akibat penurunan jumlah keping darah (trombosit)

Segera hubungi dokter karena efek samping tersebut kadang bisa merupakan kondisi yang serius.

Efek samping yang lebih ringan

Selain efek samping serius yang tercantum di atas, berikut adalah efek samping yang lebih ringan dari larutan infus Nimotop:

Efek samping yang jarang terjadi
(Mungkin dialami oleh maksimal 1 di antara 100 orang)

- ruam
- sakit kepala
- detak jantung cepat
- ingin muntah *(mual)*

Efek samping langka
(Mungkin dialami oleh maksimal 1 di antara 1.000 orang)

- sembelit (buang air besar tidak lancar)
- sedikit peningkatan pada enzim hati (akan terlihat dalam tes darah)
- nyeri dan/atau pembengkakan pada pembuluh darah vena (tromboflebitis) (kemungkinan disebabkan oleh penggumpalan darah) tempat jarum dimasukkan)

Pelaporan dugaan efek samping obat

Jika mengalami efek samping selama dan/atau setelah penggunaan obat, segera konsultasikan ke dokter atau tenaga kesehatan lainnya.
Untuk pelaporan efek samping, silakan email ke drugsafety.indonesia@bayer.com. Informasi yang disampaikan sangat penting untuk pemantauan manfaat-risiko produk yang berkelanjutan.

5. Cara menyimpan larutan infus Nimotop

Jauhkan obat ini dari pandangan dan jangkauan anak-anak.

Jangan konsumsi obat ini setelah melewati tanggal kedaluwarsa yang tercantum di kemasan.
Simpan pada suhu di bawah 25 °C dan jauhkan dari sinar matahari.

6. Isi kemasan dan informasi lainnya

Kandungan larutan infus Nimotop

Zat aktif obat ini adalah nimodipin. Bahan lainnya antara lain etanol, makrogol, natrium sitrat, asam sitrat, dan air untuk injeksi.

Bentuk dan isi kemasan larutan infus Nimotop

Setiap vial kaca mengandung 10 mg nimodipin dalam 50 mL larutan infus (larutan kadar 0,02%).

Setiap kemasan berisi 1 x 50 mL vial dengan 1 slang infus polietilena .

No. Reg.: XXXXX

Harus dengan resep dokter

Diproduksi oleh:
Solupharm Pharmazeutische Erzeugnisse GmbH, Melsungen - Germany

Dirilis oleh:
Bayer AG, Leverkusen – Germany

Diimpor oleh:
PT Bayer Indonesia, Depok - Indonesia