

- **PREGNANCY** May inhibit labour. Not to be used in multiple pregnancy (twins or more) unless there is no other acceptable alternative. Toxicity in *animal* studies. Risk of severe maternal hypotension and fetal hypoxia—avoid excessive decrease in blood pressure.
- **BREAST FEEDING** Manufacturer advises avoid—present in breast milk.
- **HEPATIC IMPAIRMENT**  
**Dose adjustments** In adults, manufacturer advises dose reduction—consult product literature.
- **RENAL IMPAIRMENT**  
**Dose adjustments** Use with caution—increased risk of serious hypotension; consider using low initial dose.
- **MONITORING REQUIREMENTS** Monitor blood pressure and heart rate at least every 5 minutes during intravenous infusion, and then until stable, and continue monitoring for at least 12 hours after end of infusion.
- **DIRECTIONS FOR ADMINISTRATION** Intravenous nicardipine should only be administered under the supervision of a specialist and in a hospital or intensive care setting in which patients can be closely monitored.  
For *continuous intravenous infusion*, dilute to a concentration of 100–200 micrograms/mL with Glucose 5% and give *via* volumetric infusion pump or syringe driver; protect from light; to minimise peripheral venous irritation, change site of infusion every 12 hours; risk of adsorption on to plastic in the presence of saline solutions; incompatible with bicarbonate or alkaline solutions—consult product literature.
- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.  
**Solution for infusion**  
▶ **Nicardipine hydrochloride (Non-proprietary)**  
Nicardipine hydrochloride 1 mg per 1 ml Nicardipine 10mg/10ml solution for injection ampoules | 5 ampoule [PoM] £50.00  
Nicardipine hydrochloride 2.5 mg per 1 ml Cardene I.V. 25mg/10ml solution for infusion ampoules | 10 ampoule [PoM] 
- **UNLICENSED USE** Not licensed for use in children.
- **CONTRA-INDICATIONS** Cardiogenic shock · significant aortic stenosis
- **CAUTIONS** Diabetes mellitus · heart failure · poor cardiac reserve · severe hypotension · short-acting formulations are not recommended for angina or long-term management of hypertension; their use may be associated with large variations in blood pressure and reflex tachycardia · significantly impaired left ventricular function (heart failure deterioration observed)
- **INTERACTIONS** → Appendix 1: calcium channel blockers
- **SIDE-EFFECTS**  
▶ **Common or very common** Constipation · malaise · oedema · vasodilation  
▶ **Uncommon** Allergic oedema · angioedema · anxiety · chills · dry mouth · epistaxis · erectile dysfunction · gastrointestinal discomfort · gastrointestinal disorders · hypotension · joint disorders · laryngeal oedema · migraine · muscle complaints · nasal congestion · pain · skin reactions · sleep disorder · syncope · tremor · urinary disorders · vertigo · visual impairment  
▶ **Rare or very rare** Sensation abnormal  
▶ **Frequency not known** Agranulocytosis · angina pectoris · chest pain · drowsiness · dyspnoea · eye pain · hyperglycaemia · jaundice · leucopenia · photoallergic reaction · pulmonary oedema · toxic epidermal necrolysis
- **PREGNANCY** May inhibit labour; manufacturer advises avoid before week 20, but risk to fetus should be balanced against risk of uncontrolled maternal hypertension. Use only if other treatment options are not indicated or have failed.
- **BREAST FEEDING** Amount too small to be harmful but manufacturers advise avoid.
- **HEPATIC IMPAIRMENT**  
**Dose adjustments** In adults, manufacturer advises consider dose reduction—consult product literature.
- **DIRECTIONS FOR ADMINISTRATION** For rapid effect in *hypertensive crisis* or *acute angina*, bite capsules and swallow liquid or use liquid preparation if 5 mg or 10 mg dose inappropriate. If liquid unavailable, extract contents of capsule via a syringe and use immediately—cover syringe with foil to protect contents from light; capsule contents may be diluted with water if necessary.
- **PATIENT AND CARER ADVICE**  
Medicines for Children leaflet: Nifedipine for high blood pressure [www.medicinesforchildren.org.uk/nifedipine-high-blood-pressure](http://www.medicinesforchildren.org.uk/nifedipine-high-blood-pressure)
- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug. Forms available from special-order manufacturers include: oral suspension, oral drops  
**Oral drops**  
▶ **Nifedipine (Non-proprietary)**  
Nifedipine 20 mg per 1 ml Nifedipin-ratiopharm 20mg/ml oral drops | 30 ml [PoM] 

## Nifedipine

11-Sep-2018 

### ● INDICATIONS AND DOSE

#### Hypertensive crisis | Acute angina in Kawasaki disease or progeria

- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Child: Initially 250–500 micrograms/kg (max. per dose 10 mg), then repeat once if necessary, may cause unpredictable and severe reduction of blood pressure—monitor closely following administration; if ineffective consider alternative treatment and seek specialist advice

#### Hypertension | Angina in Kawasaki disease or progeria

- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Child 1 month–11 years: 200–300 micrograms/kg 3 times a day, dose frequency depends on preparation used; maximum 3 mg/kg per day; maximum 90 mg per day
- ▶ Child 12–17 years: 5–20 mg 3 times a day, dose frequency depends on preparation used; maximum 90 mg per day

#### Raynaud's syndrome

- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Child 2–17 years: 2.5–10 mg 2–4 times a day, start with low doses at night and increase gradually to avoid postural hypotension, dose frequency depends on preparation used

#### Persistent hyperinsulinaemic hypoglycaemia

- ▶ BY MOUTH USING IMMEDIATE-RELEASE MEDICINES
- ▶ Neonate: 100–200 micrograms/kg 4 times a day (max. per dose 600 micrograms/kg).

### ● INDICATIONS AND DOSE

#### Treatment of supraventricular arrhythmias

- ▶ BY SLOW INTRAVENOUS INJECTION
- ▶ Child 1–17 years (administered on expert advice): 100–300 micrograms/kg (max. per dose 5 mg) for 1 dose, to be given over 2–3 minutes (with ECG and blood-pressure monitoring), dose can be repeated after 30 minutes if necessary continued →

## Verapamil hydrochloride

06-Aug-2018

### ● INDICATIONS AND DOSE

#### Treatment of supraventricular arrhythmias

- ▶ BY SLOW INTRAVENOUS INJECTION
- ▶ Child 1–17 years (administered on expert advice): 100–300 micrograms/kg (max. per dose 5 mg) for 1 dose, to be given over 2–3 minutes (with ECG and blood-pressure monitoring), dose can be repeated after 30 minutes if necessary continued →