

- ▶ **Frequency not known**
- ▶ With intravenous use Acute angle closure glaucoma · angina pectoris · appetite decreased · cardiac arrest · dizziness · hypokalaemia · intracranial haemorrhage · psychotic disorder · pulmonary oedema
- ▶ With oral use Arrhythmias · circulation impaired · dry mouth · enuresis · hypertension · sedation
- **PREGNANCY**
- ▶ With oral use Manufacturer advises avoid.
- ▶ With intravenous use Increased fetal heart rate reported with parenteral ephedrine.
- **BREAST FEEDING** Present in milk; manufacturer advises avoid—irritability and disturbed sleep reported.
- **RENAL IMPAIRMENT** Use with caution.
- **LESS SUITABLE FOR PRESCRIBING**
- ▶ With oral use Ephedrine tablets are less suitable and less safe for use as a bronchodilator than the selective beta<sub>2</sub> agonists.
- **EXCEPTIONS TO LEGAL CATEGORY**
- ▶ With oral use For exceptions relating to ephedrine tablets see *Medicines, Ethics and Practice*, London, Pharmaceutical Press (always consult latest edition).

- **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 solution, solution for injection

#### Tablet

- ▶ **Ephedrine hydrochloride (Non-proprietary)**

Ephedrine hydrochloride 15 mg Ephedrine hydrochloride 15mg tablets | 28 tablet [PoM](#) | £114.24 DT = £76.30

Ephedrine hydrochloride 30 mg Ephedrine hydrochloride 30mg tablets | 28 tablet [PoM](#) | £172.94 DT = £115.61

#### Solution for injection

- ▶ **Ephedrine hydrochloride (Non-proprietary)**

Ephedrine hydrochloride 3 mg per 1 ml Ephedrine 30mg/10ml solution for injection ampoules | 10 ampoule [PoM](#) | £107.44

Ephedrine 30mg/10ml solution for injection pre-filled syringes | 1 pre-filled disposable injection [PoM](#) | £7.59-£9.50 | 12 pre-filled disposable injection [PoM](#) | £114.00

Ephedrine hydrochloride 30 mg per 1 ml Ephedrine 30mg/1ml solution for injection ampoules | 10 ampoule [PoM](#) | £52.50-£69.62 DT = £69.62

## XANTHINES

### Aminophylline

18-Mar-2020

- **INDICATIONS AND DOSE**

#### Severe acute asthma in patients not previously treated with theophylline

- ▶ BY SLOW INTRAVENOUS INJECTION
- ▶ Child: 5 mg/kg (max. per dose 500 mg), to be followed by intravenous infusion
- ▶ Adult: 250–500 mg (max. per dose 5 mg/kg), to be followed by intravenous infusion

#### Severe acute asthma

- ▶ BY INTRAVENOUS INFUSION
- ▶ Child 1 month–11 years: 1 mg/kg/hour, adjusted according to plasma-theophylline concentration
- ▶ Child 12–17 years: 500–700 micrograms/kg/hour, adjusted according to plasma-theophylline concentration
- ▶ Adult: 500–700 micrograms/kg/hour, adjusted according to plasma-theophylline concentration
- ▶ Elderly: 300 micrograms/kg/hour, adjusted according to plasma-theophylline concentration

#### Severe acute exacerbation of chronic obstructive pulmonary disease in patients not previously treated with theophylline

- ▶ BY SLOW INTRAVENOUS INJECTION
- ▶ Adult: 250–500 mg (max. per dose 5 mg/kg), to be followed by intravenous infusion

#### Severe acute exacerbation of chronic obstructive pulmonary disease

- ▶ BY INTRAVENOUS INFUSION
- ▶ Adult: 500–700 micrograms/kg/hour, adjusted according to plasma-theophylline concentration
- ▶ Elderly: 300 micrograms/kg/hour, adjusted according to plasma-theophylline concentration

#### Chronic asthma

- ▶ BY MOUTH USING MODIFIED-RELEASE MEDICINES
- ▶ Child (body-weight 40 kg and above): Initially 225 mg twice daily for 1 week, then increased if necessary to 450 mg twice daily, adjusted according to plasma-theophylline concentration

#### Reversible airway obstruction

- ▶ BY MOUTH USING MODIFIED-RELEASE MEDICINES
- ▶ Adult (body-weight 40 kg and above): Initially 225 mg twice daily for 1 week, then increased if necessary to 450 mg twice daily, adjusted according to plasma-theophylline concentration

#### DOSE ADJUSTMENTS DUE TO INTERACTIONS

- ▶ Dose adjustment may be necessary if smoking started or stopped during treatment.

#### DOSES AT EXTREMES OF BODY-WEIGHT

- ▶ To avoid excessive dosage in obese patients, dose should be calculated on the basis of ideal weight for height.

#### PHARMACOKINETICS

- ▶ Aminophylline is a stable mixture or combination of theophylline and ethylenediamine; the ethylenediamine confers greater solubility in water.
- ▶ Theophylline is metabolised in the liver. The plasma-theophylline concentration is increased in heart failure, hepatic impairment, and in viral infections. The plasma-theophylline concentration is decreased in smokers, and by alcohol consumption. Differences in the half-life of aminophylline are important because the toxic dose is close to the therapeutic dose.

#### PHYLLOCONTIN CONTINUS® FORTE

#### Reversible airways obstruction

- ▶ BY MOUTH USING MODIFIED-RELEASE MEDICINES
- ▶ Adult: Initially 350 mg twice daily for 1 week, then increased if necessary to 700 mg twice daily, increase dose according to plasma-theophylline concentration

- **UNLICENSED USE**

- ▶ In children Aminophylline injection not licensed for use in children under 6 months.

- **CAUTIONS** Arrhythmias following rapid intravenous injection · cardiac arrhythmias or other cardiac disease · elderly (increased plasma-theophylline concentration) · epilepsy · fever · hypertension · peptic ulcer · risk of hypokalaemia · thyroid disorder

- **INTERACTIONS** → Appendix 1: aminophylline

- **SIDE-EFFECTS**

#### GENERAL SIDE-EFFECTS

- Headache · nausea · palpitations · seizure (more common when given too rapidly by intravenous injection)

#### SPECIFIC SIDE-EFFECTS

- ▶ With intravenous use Abdominal pain · anxiety · arrhythmia (more common when given too rapidly by intravenous injection) · confusion · delirium · diarrhoea · dizziness · electrolyte imbalance · gastrointestinal haemorrhage · gastroesophageal reflux disease · hyperthermia ·