

renal and ureteric stones. If NSAIDs are contra-indicated or not sufficiently controlling the pain, consider intravenous paracetamol. Subsequently, opioids can be used if both paracetamol and NSAIDs are contra-indicated or not sufficiently controlling the pain. Do not offer antispasmodics to patients with suspected renal colic. \blacktriangle

Medical Expulsive Therapy

EvGr Consider alpha-adrenoceptor blockers for patients with distal ureteric stones less than 10mm in diameter. Alpha-adrenoceptor blockers may also be considered as adjunctive therapy for patients having shockwave lithotripsy for ureteric stones less than 10mm. \blacktriangle

Prevention of recurrence of stones

EvGr Alongside lifestyle advice, consider potassium citrate [unlicensed] in patients with recurrent stones composed of at least 50% calcium oxalate. Thiazides [unlicensed] may be given if patients also have hypercalciuria after restricting their sodium intake to no more than 6g a day. \blacktriangle

1.4 Urological pain

Urological pain

03-Apr-2019

Treatment

Lidocaine hydrochloride gel is a useful topical application in *urethral pain* or to relieve the discomfort of catheterisation.

For information on the management of pain in renal and ureteric stones, see Renal and ureteric stones p. 831.

Alkalinisation of urine

Alkalinisation of urine can be undertaken with potassium citrate. The alkalinising action may relieve the discomfort of *cystitis* caused by lower urinary tract infections. Sodium bicarbonate p. 1099 is used as a urinary alkalinising agent in some metabolic and renal disorders.

ALKALISING DRUGS > URINARY

Citric acid with potassium citrate

12-May-2020

● INDICATIONS AND DOSE

Relief of discomfort in mild urinary-tract infections | Alkalinisation of urine

- ▶ BY MOUTH USING ORAL SOLUTION
- ▶ Adult: 10 mL 3 times a day, diluted well with water

- **CAUTIONS** Cardiac disease · elderly
- **INTERACTIONS** → Appendix 1: potassium citrate
- **SIDE-EFFECTS** Hyperkalaemia · nausea · vomiting
- **RENAL IMPAIRMENT** Avoid in severe impairment. **Monitoring** Close monitoring required in renal impairment—high risk of hyperkalaemia.
- **PRESCRIBING AND DISPENSING INFORMATION** When prepared extemporaneously, the BP states Potassium Citrate Mixture BP consists of potassium citrate 30%, citric acid monohydrate 5% in a suitable vehicle with a lemon flavour. Extemporaneous preparations should be recently prepared according to the following formula: potassium citrate 3 g, citric acid monohydrate 500 mg, syrup 2.5 mL, quillaia tincture 0.1 mL, lemon spirit 0.05 mL, double-strength chloroform water 3 mL, water to 10 mL. Contains about 28 mmol K⁺/10 mL.

- **EXCEPTIONS TO LEGAL CATEGORY** Proprietary brands of potassium citrate are on sale to the public for the relief of discomfort in mild urinary-tract infections.

- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.

Oral solution

CAUTIONARY AND ADVISORY LABELS 27

- ▶ **Citric acid with potassium citrate (Non-proprietary)**

Citric acid monohydrate 50 mg per 1 mL, Potassium citrate 300 mg per 1 mL Potassium citrate mixture | 200 mL \mathcal{P} £1.38 DT = £1.38

Sodium citrate

18-May-2020

● INDICATIONS AND DOSE

Bladder washouts

- ▶ Adult: (consult product literature)

Relief of discomfort in mild urinary-tract infections

- ▶ BY MOUTH
- ▶ Adult: (consult product literature)

Constipation (dose approved for use by community practitioner nurse prescribers)

- ▶ BY RECTUM
- ▶ Child 3-17 years: 5 mL for 1 dose
- ▶ Adult: 5 mL for 1 dose

MICOLETTE[®]

Constipation

- ▶ BY RECTUM
- ▶ Child 3-17 years: 5–10 mL for 1 dose
- ▶ Adult: 5–10 mL for 1 dose

MICRALAX[®]

Constipation

- ▶ BY RECTUM
- ▶ Child 3-17 years: 5 mL for 1 dose
- ▶ Adult: 5 mL for 1 dose

RELAXIT[®]

Constipation

- ▶ BY RECTUM
- ▶ Child 1 month-2 years: 5 mL for 1 dose, insert only half the nozzle length
- ▶ Child 3-17 years: 5 mL for 1 dose
- ▶ Adult: 5 mL for 1 dose

● CONTRA-INDICATIONS

- ▶ With oral use Conditions where excess sodium or glucose should be avoided (e.g. cardiac disease, hypertension, patients on a sodium-restricted diet or diabetes)
- ▶ With rectal use Acute gastro-intestinal conditions

● CAUTIONS

- ▶ With oral use Elderly
- ▶ With rectal use Debilitated patients (in adults) · sodium and water retention in susceptible individuals

- **INTERACTIONS** → Appendix 1: sodium citrate

- **SIDE-EFFECTS** Polyuria

● PREGNANCY

- ▶ With oral use Use with caution.

● RENAL IMPAIRMENT

- ▶ With oral use In patients with fluid retention, avoid antacids containing large amounts of sodium.

- **PRESCRIBING AND DISPENSING INFORMATION** Sodium citrate 300 mmol/litre (88.2 mg/mL) oral solution is licensed for use before general anaesthesia for caesarean section (available from Viridian).

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