Tuberculosis, in combination with other drugs (intermittent supervised 6-month treatment) (under expert supervision)

▸ BY MOUTH

- Child (body-weight up to 50 kg): 50 mg/kg 3 times a week (max. per dose 2 g 3 times a week) for 2 months (initial phase)
- Child (body-weight 50 kg and above): 50 mg/kg 3 times a week (max. per dose 2.5 g 3 times a week) for 2 months (initial phase)
- Adult (body-weight up to 50 kg): 2 g 3 times a week for 2 months (initial phase)
- Adult (body-weight 50 kg and above): 2.5 g 3 times a week for 2 months (initial phase)

- **CONTRA-INDICATIONS** Acute attack of gout (in adults)
- **CAUTIONS** Diabetes · gout (in adults)
- **INTERACTIONS** → Appendix 1: pyrazinamide
- **SIDE-EFFECTS** Appetite decreased · arthralgia · dysuria · flushing · gout aggravated · hepatic disorders · malaise · nausea · peptic ulcer aggravated · photosensitivity reaction · sideroblastic anaemia · skin reactions · splenomegaly · vomiting
- **PREGNANCY** Manufacturer advises use only if potential benefit outweighs risk.
- **BREAST FEEDING** Amount too small to be harmful.
- **HEPATIC IMPAIRMENT** Manufacturer advises avoid in severe impairment, acute hepatic disease and for up to 6 months after occurrence of hepatitis (risk of increased exposure).
- **RENAL IMPAIRMENT**

  Dose adjustments ▸ In adults 25–30 mg/kg 3 times a week if eGFR less than 30 mL/minute/1.73 m^2.

  ▸ In children If estimated glomerular filtration rate less than 30 mL/minute/1.73 m^2, use 25–30 mg/kg 3 times a week.

  Monitoring Monitor for gout in renal impairment.
- **MONITORING REQUIREMENTS**

▸ *Renal function* should be checked before treatment.

▸ *Hepatic function* should be checked before treatment. If there is no evidence of liver disease (and pre-treatment liver function is normal), further checks are only necessary if the patient develops fever, malaise, vomiting, jaundice or unexplained deterioration during treatment.

▸ In adults Those with alcohol dependence should have frequent checks of hepatic function, particularly in the first 2 months.

- **PRESCRIBING AND DISPENSING INFORMATION**

▸ In children In general, doses should be rounded up to facilitate administration of suitable volumes of liquid or an appropriate strength of tablet. Doses may also need to be recalculated to allow for weight gain in younger children. The RCPCH and NPPG recommend that, when a liquid special of pyrazinamide is required, the following strength is used: 500 mg/5 mL.

- **PATIENT AND CARER ADVICE**

Hepatic disorders Patients or their carers should be told how to recognise signs of liver disorder, and advised to discontinue treatment and seek immediate medical attention if symptoms such as persistent nausea, vomiting, malaise or jaundice develop.

Medicines for Children leaflet: Pyrazinamide for treatment of tuberculosis www.medicinesforchildren.org.uk/pyrazinamide-treatment-tuberculosis

- **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

Tablet

CAUTIONARY AND ADVISORY LABELS 8

- **Pyrazinamide (Non-proprietary)**
  Pyrazinamide 500 mg Pyrazinamide 500mg tablets | 30 tablet PoM £40.06 DT = £40.06
- **Zinamide** (Genus Pharmaceuticals Ltd)
  Pyrazinamide 500 mg Zinamide 500mg tablets | 30 tablet PoM £31.35 DT = £40.06

Combinations available: ***Rifampicin with ethambutol, isoniazid and pyrazinamide,*** p. 617 · ***Rifampicin with isoniazid and pyrazinamide,*** p. 618

2.6 Urinary tract infections

Urinary-tract infections

12-Feb-2019

Description of condition

Urinary-tract infections (UTIs) are common infections that can affect any part of the urinary tract. They occur more frequently in women, and are usually independent of any risk factor. UTIs are predominantly caused by bacteria from the gastrointestinal tract entering the urinary tract, with *Escherichia coli* being the most common cause. Infection due to *Candida albicans* is rare, but may occur in hospitalised patients who are immunocompromised or have an indwelling catheter.

Lower UTIs are associated with inflammation of the bladder (cystitis) and urethra (urethritis). In some patients infection can ascend the urinary tract and lead to an upper UTI. Upper UTIs affect the proximal part of the ureters (pyelitis) or the proximal part of the ureters and the kidneys (pyelonephritis), and can cause renal scarring, abscess or failure, and sepsis. The most common signs and symptoms of lower UTIs are dysuria, increased urinary frequency and urgency, urine that is strong smelling, cloudy or contains blood, and persistent lower abdominal pain. Upper UTIs usually present with accompanying loin pain and fever.

In pregnant women, asymptomatic bacteriuria is a risk factor for pyelonephritis and premature labour. UTIs in pregnancy have been associated with developmental delay and cerebral palsy in the infant, as well as fetal death.

Insertion of a catheter into the urinary tract increases the risk of developing a UTI, and the longer the catheter is in place for, further increases the risk of bacteriuria.

UTIs are considered recurrent after at least two episodes within 6 months, or three or more episodes within 12 months.

Acute prostatitis is an infection of the prostate gland and is usually caused by a UTI. It can occur spontaneously or after certain medical procedures and can last for several weeks. Common symptoms include sudden onset of fever, acute urinary retention or irritative voiding symptoms. Possible complications include prostatic abscess, bacteraemia, epididymitis, and pyelonephritis. Chronic prostatitis is a complication of acute prostatitis and is defined as at least 3 months of urogenital pain usually associated with lower urinary tract symptoms.

Aims of treatment

The aims of treatment are to relieve symptoms, treat the underlying infection, prevent systemic infection, and to reduce the risk of complications.

Non-drug treatment

EvGr Patients with a UTI should be advised to drink plenty of fluids to avoid dehydration, and to use self-care strategies to