

FAQ

FREQUENTLY ASKED QUESTIONS



Common Infections in General Practice: Helping Your Registrar Make the Best Decision – Part 1

As supervisors, your role in helping your registrars manage common infection presentations includes giving them an understanding of the prevalence of common infections, recently identified as just under 10% of encounters seen in general practice:

- URTIs (upper respiratory tract infections) = 5.5% of encounters
- Acute bronchitis = 2% of encounters
- UTIs (urinary tract infections) = 1.8% of encounters

You also need to address:

- Diagnostic uncertainty (many of these encounters are clear cut, but many are not; there can be a lot of anxiety around missing something more serious)
- The potential for serious disease (noting it is mostly self-limiting)
- Antimicrobial stewardship and minimising inappropriate [antibiotic prescribing](#)

In terms of tonnage per capita, Australia is in the top 10 countries in the world for human antibiotics consumption... In an average year, around 50% of all Australians have been issued at least one prescription for antibiotics.

Treating Urinary Tract Infections

There have been big changes in the way we should treat simple UTI's - one of the most common bacterial infections that we see.

The main change is that, rather than rushing towards antibiotics, we should encourage patients to think about self-care.

The reason for this change is that a number of studies published recently have shown that if people just take simple analgesia for symptoms of UTI, in a significant proportion of cases (50-67%), the symptoms will resolve by themselves by Day 7.

These studies emphasize the importance of adequate fluid intake, particularly water, and reveal that there is no good data to support the use of either cranberry products or things like Hiprex as was previously advocated.

RECOMMENDATIONS

For non-pregnant women, patients with minor symptoms should be directed to self-care – drink lots of water, take ibuprofen for pain – with a back-up antibiotic in the form of a delayed script if you think risk of immediate complications is low.

Or, conversely, immediate antibiotics should be prescribed if you are concerned, taking into account other co-morbidities.

The guidelines for men, pregnant women, elderly and children have not changed: immediate antibiotics.

CASE STUDY 1 : UNCOMPLICATED UTI

- No significant PMHx
- Presents with two days of dysuria and frequency++
- Afebrile, no flank pain
- Positive dipstick for leucocytes and nitrites
- Keen to avoid antibiotics as they give her thrush



IBUPROFEN VERSUS ANTIBIOTICS

- >3 RCTs
- 50-70% recover completely without antibiotics
- BUT subsequent pyelonephritis more common in ibuprofen group (2-3% versus 0-1%)

FAQ

FREQUENTLY ASKED QUESTIONS

Antibiotic resistance in E.coli

Around 12% of E.Coli acquired in the community are multi-drug resistant, and a further 20% of hospital-acquired E.Coli are also ESBL(extended-spectrum beta-lactamase) producers. These figures are only increasing.

- Resistant to
 - Amoxycillin ~ 40%
 - Trimethoprim ~15%
 - Ciprofloxacin ~8%
- Multidrug resistance (R to ≥ 3 classes of antibiotics) increasingly common
- 'ESBL' harboured on a plasmid, along with other R genes (i.e. ESBL=MDR)

CASE STUDY 1 : UNCOMPLICATED UTI (CONTINUED)

- Ongoing symptoms ++
- Previously, only option was IV amikacin or
- IV meropenem in hospital for 3 days (or via ED)
- Since 2018, Fosfomycin TGA approved in Australia
 - Single 3g oral dose effective for uncomplicated UTI
 - Active against >98% E.Coli, including ESBL-producers
 - BUT – costs \$150 per dose – can fund via hospital



CASE STUDY 2 - RECURRENT UTI

- Presents with 'another bloody UTI!'
- PMHx – diet controlled T2DM
- Sixth confirmed infection in 18 months
- Previous renal tract imaging normal
- 'Is there something I can take?'



The definition of recurrent UTI is 3 UTIs in a year or 2 in 6 months

The latest eTG guidance for recurrent UTI dose dispels some long-held beliefs of patients and clinicians alike and highlights the importance of:

- Self-Care - behavioural/personal hygiene measures and self-care to reduce infections
- Topical oestrogen in post-menopausal women
- Patient initiated treatment – for example in non-pregnant women consider a trial of single-dose antibiotic prophylaxis for identifiable triggers (e.g. intercourse)
- Continuous prophylaxis - if this is not effective, consider daily prophylaxis and review within 6/12
- In pregnant women, men and children consider daily antibiotic prophylaxis with specialist advice
- Increased water intake shown effective in a recent RCT
- There is no role for Cranberry or ascorbic acid

NOTE: The above applies to women. In men, think prostatitis or other pathology (e.g. renal stones)

FAQ

FREQUENTLY ASKED QUESTIONS

CASE STUDY 3 - ASYMPTOMATIC BACTERIURIA (A.B.)

- Attends for 75-year health check
- Currently well, asymptomatic
- Urine dipstick shows leucocytes
- Last UTI 5 years previously



As many as 50% of women over the age of 70 have A.B., and are more likely to have it if they have diabetes as they get older.

- >9 RCTs have shown no benefit of treating A.B.
 - Some have shown higher incidence of symptomatic UTI over next 3 months
 - No difference in proportion that are colonised 6 months later
- Exceptions: pregnancy; prior to urological surgery
- Hence, do NOT send urine for culture unless symptoms

Elderly/ Residential Aged Care Facilities (RACFs)

The diagnosis of UTI in RACFs is not always straightforward: particularly demented or delirious patients who may not complain of the classical symptoms.

The RACGP Silver book was updated in September last year to reflect that asymptomatic bacteriuria is the leading reason for inappropriate antibiotic use in aged care. It recommended that screening should only be done if the patient is symptomatic, in which case MSU is recommended.

Choosing Wisely Australia's recommends:

- Do not screen for or treat asymptomatic bacteriuria
- Do not investigate cloudy or malodorous urine without other symptoms or signs of UTI

eTG has a handy flow chart which can help with our clinical decision making (see Figure 1 below), which also suggests we should not investigate malodorous or cloudy urine in the RACF without systemic signs (since these things have poor PPV for UTI – they reflect solutes in the urine, i.e. diet, medications, dehydration).

It is important to note that resistance is common, and evidence for prophylaxis is lacking.

CASE STUDY 4 – CELLULITIS

- Presents to your registrar with three days of painful swelling right foot
- PMHx – obesity, hypertension on ACEi
- T 37.4, hot red swollen R foot



FAQ

FREQUENTLY ASKED QUESTIONS

Separate studies have concluded that approximately 30% of cellulitis patients are misdiagnosed. Cellulitis is often over-diagnosed as there are so many mimics - hospital studies estimate that 1 in 3 patients admitted with cellulitis do not have it, especially in older patients with chronic venous insufficiency, and varicose eczema.

Lipodermatosclerosis can cause erythema which is warm, so it easy to mistake as cellulitis; if it is bilateral it is VERY unlikely to be cellulitis; if unsure, raising the leg 45 degrees is useful, the redness persists with cellulitis but goes with other causes.

The red flag differential we do not want to miss is necrotising fasciitis.



DIFFERENTIAL DIAGNOSIS

- DVT
- Chronic venous insufficiency
- Varicose eczema
- Lymphoedema
- Lipodermatosclerosis
- Necrotising fasciitis
- **Bilateral lower limb cellulitis is rare**

RED FLAGS

1. Unusual location
 - Facial or periorbital cellulitis
 - Genital or perianal cellulitis
 - Over a joint (?septic arthritis)
2. Significant immunosuppression
3. Suspicion of rapidly progressive deep infection (eg. necrotising fasciitis)
4. Unusual exposures
 - Animal bites (cats/dogs)
 - Pasteurella
 - Human bite
 - Anaerobic Streps, viridans Streps, Eikenella spp.
 - Fish hook/barb wound
 - Erysipelothrix spp.
 - Salt-water exposure
 - Vibrio vulnificus – necrotising haemorrhagic cellulitis in people with cirrhosis
 - Fresh water exposure
 - Aeromonas spp.

FAQ

FREQUENTLY ASKED QUESTIONS

Cellulitis treatment guidelines

| | | |
|---------------------------|--|---|
| Cellulitis and erysipelas | <p><i>S. aureus</i> Beta-haemolytic streptococci</p> | <ul style="list-style-type: none"> • Examine for predisposing factors • Consider unusual exposures – broaden antibiotic therapy if this is the case • Culture and susceptibility testing for lesions, tissue or blood • Elevate limb • Treat underlying predisposing skin infection e.g. tinea • Mild disease: <ul style="list-style-type: none"> – oral dicloxacillin/cephalexin/clindamycin for 5–10 days – oral phenoxymethylpenicillin if culture is positive or clinical presentation of <i>S. pyogenes</i> • Severe disease or systemic features: <ul style="list-style-type: none"> – intravenous flucloxacillin/cephazolin/vancomycin • Consider decolonisation or prophylactic antibiotics with recurrent disease |
|---------------------------|--|---|

Antibiotic choice – you have your guideline choices, but learning points here are:

- It's no longer considered necessary for dual antibiotics to be used
e.g. pen V to cover strep AND flucloxacillin to cover staph
- narrow spectrum single antibiotics are generally sufficient to cover staph and strep
- Flucloxacillin and cephalexin both cover Group A Strep as well as *Staph aureus*
- Penicillin provides no added benefit.

In terms of recurrence – 1 in 3 get recurrence – so we should consider treating individual symptoms and consider staph decolonisation if present (nasal swabs in recurrent cases) and prophylactic antibiotics in recurrent cases.

- Antibiotic treatment
- Elevation
- Analgesia
- 48-72 hour follow up
 - Redness WILL increase due to toxin release
- Average time until "the tide has turned" = 36 hours after active treatment commences
- 30% take >14 days for all signs/symptoms to resolve

If we have a ERON class 1 patient that we are treating as an outpatient, in addition to the oral antibiotics we need to advise regarding elevation, analgesia and early review to see if the cellulitis is progressing.

It is therefore helpful to mark the leg – we are looking for progression beyond the line.

It is important to note initially the redness of the leg may increase due to toxin release.

Slow resolution is the norm, and redness and erythema will persist for several days after successful treatment... but this doesn't mean treatment failure.



WHO NEEDS REFERRAL TO HOSPITAL?

- Can't tolerate oral antibiotics (vomiting or unable to eat/drink)
- Septic (i.e. fever, tachycardia, tachypnoea, confusion – not just a fever)
- Suspected necrotising fasciitis
- Red flags (can d/w ID if unsure)

FAQ

FREQUENTLY ASKED QUESTIONS

Necrotising fasciitis

Necrotising fasciitis can be hard to diagnose in early stages - and in its early stages it is **essential** to diagnose.

The mortality rates for this condition are spectacularly high – between 20% to 40% mortality.

In an acute setting, when should we be feeling this is necrotising fasciitis?

- The key thing is that fever and pain are often disproportionate to the surface clinical findings
- You often get exquisite pain and local tenderness due to the deeper tissue necrosis
- Our alarm bells should ring when the pain is incredibly severe ('too severe for cellulitis') with minimal surface erythema
- There may be dusky violaceous areas on the skin and later signs include overlying crepitus & sensory loss
- The classic cyanotic and bullous changes with blisters are late

So the early signs we are looking for are "Beware severe pain with minimal erythema"

Chronic lower limb ulcers

- Are always colonised with bacteria
- Are generally colonised with Gram negatives
 - Normal wound flora is 'spit above and shit below' the umbilicus
- Are often colonised with Pseudomonas
- **Do not need antibiotic treatment unless there is**
 - Spreading surrounding cellulitis
 - Fever without alternative explanation
 - Associated collection/abscess
- Even if we do treat with antibiotics, generally improve with treatment targeting S. aureus/Strep
 - Regardless of swab result
- **Thus – don't swab chronic ulcers for culture!**
- Treat with dressings, leg elevation
 - Venous ulcers – compression therapy
 - Arterial ulcers – revascularisation

Staph aureus decolonisation

- Should consider in anyone with recurrent boils
- Wait until all lesions healed. Then 7 days course of:
 1. All over chlorhexidine body wash daily OR bleach bath 2nd day
 2. Mupirocin to both nostrils BD
 3. Wash all sheets, towels, pillow slips etc. on days 1 and 5
 4. Also treat pets and household IF they have abscess(es)

ASID Choosing Wisely Australia recommendations

1. Do not use antibiotics in asymptomatic bacteriuria.
2. Do not take a swab or use antibiotics for the management of a leg ulcer without clinical infection.
3. Avoid prescribing antibiotics for upper respiratory tract infection.
4. Do not investigate or treat for faecal pathogens in the absence of diarrhoea or other gastro-intestinal symptoms.
5. In a patient with fatigue, avoid performing multiple serological investigations, without a clinical indication or relevant epidemiology.

Resources

- Ibuprofen versus fosfomycin for uncomplicated urinary tract infection in women: randomised controlled trial
<https://www.bmj.com/content/351/bmj.h6544>
- Ibuprofen versus pivmecillinam for uncomplicated urinary tract infection in women—A double-blind, randomized non-inferiority trial
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5953442/>
- Diagnosis and management of cellulitis
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6303460/>
- Penicillin to Prevent Recurrent Leg Cellulitis
<https://www.nejm.org/doi/full/10.1056/NEJMoa1206300>
- GPSA teaching plans:
 - [Cellulitis](#)
 - [URTI](#)
 - [UTI](#)
 - [Leg ulcers](#)