Healthcare Improvement Scotland | SAPG Safeguarding antibiotics

Good practice recommendations for antimicrobial use in frail older people

Background:

This document aims to provide NHS boards with recommendations for rational, safe and effective use of antimicrobials in frail elderly people in both hospital and community settings, including care homes. Older people are more likely to be prescribed antimicrobials than the younger population (x 2 for those >80 years and x 3 for care home residents). The risks and benefits of treating or not treating suspected infection in this group requires consideration. In particular, frail older people are at both increased risk due to consequences of missed treatment opportunity (delirium and sepsis) and unnecessary treatment (*Clostridioides difficile* infection, antimicrobial resistance and polypharmacy).

Specific advice on antibiotic prescribing in the context of suspected COVID-19 is available here https://www.sapg.scot/about-us/latest-updates/updated-advice-on-covid-19/

General points:

- Current local empirical antimicrobial guidelines should be available in all healthcare settings e.g. wards, clinics, GP Practices, Out-of-hours services, Community Nursing bases, Community Pharmacies, hospices and Adult Care Homes.
- Concise user-friendly guidance to support diagnosis of infection should be available in all settings e.g. UTI decision aid, CURB/CRB-65 scores, sepsis recognition and severity assessment, management of *Clostridioides difficile* infection (CDI), recommended samples for microbiology investigations.
- The decision to start an antimicrobial in a frail elderly person should take into account clinical benefit of treatment, the nature and severity of the suspected infection, co-morbidities, polypharmacy and other concomitant health issues.
- Prescribers, community nursing teams and care home staff should be alert to the potential for infections due to resistant organisms. Patient records should be checked to confirm details of any infections and their treatment during the preceding 12 weeks to inform any initiation of antimicrobial therapy.
- In 'end of life' care or when an anticipatory/advanced care plan is in place, the relative clinical benefits and risks of antimicrobial therapy should be carefully considered and discussed with the patient and/ or carers. Local palliative care advice should be sought if required. See SAPG good practice recommendations on antibiotics towards the end of life.
- Clinical/care staff should monitor response to antimicrobial therapy regularly (daily in hospital settings) and including treatment at end of life to assess resolution of symptoms e.g. temperature returned to normal, increased energy, alertness, mobility and appetite, and also identify any adverse effects such as nausea and vomiting, diarrhoea, skin rash. Lack of response after 48 hours of treatment and any adverse effects should be highlighted to medical staff.
- Clinical staff should review microbiology results when available to ensure that empirical antimicrobial therapy is suitable and de-escalate to narrower spectrum agents as soon as possible.

Antibiotic treatment

When prescribing an antimicrobial the following issues should be considered:

- Choice of antimicrobial should follow local policy or advice from a local infection specialist.
- Avoid antimicrobials with a high risk of CDI (cephalosporins, ciprofloxacin and other quinolones, co-amoxiclav, clindamycin) whenever possible. Note that proton pump inhibitors (omeprazole, lansoprazole, esomeprazole) are also associated with an increased risk of CDI.
- Use the oral route wherever possible. If the intravenous route is used due to severity of infection or inability to swallow, a switch to oral therapy should be considered as soon as possible.
- Check potential drug interactions due to polypharmacy in the current British National Formulary (BNF) Appendix 1. Examples of potentially harmful antimicrobial interactions include clarithromycin with simvastatin and warfarin, doxycycline and quinolones with antacids, iron, calcium and nutritional supplements.
- The risk of adverse events caused by altered pharmacokinetic parameters of medicines is increased in older people due to low body weight, impaired absorption and reduced clearance.
- The shortest effective duration of antimicrobial therapy is advisable to minimise adverse events and antimicrobial resistance. Duration should follow local policy or advice from a local infection specialist. Clinical/care staff and the pharmacist supplying the antimicrobial should ensure that the prescription is discontinued once the course is complete.
- Adjust antimicrobial dosage in the presence of chronic kidney disease to avoid adverse effects - follow advice in the current BNF. Dehydration is common in older people, especially when unwell, and should be considered when interpreting eGFR or serum creatinine results. Specific antimicrobial problems in renal impairment include;
    - nitrofurantoin contraindicated – although BNF suggest avoid if eGFR < 45ml/min, MHRA advise that a short course (3 to 7 days) may be used with caution if eGFR is 30 to 44 ml/min;
    - gentamicin and vancomycin - weight-based initial dose calculations, dose adjustment and monitoring.

Specific advice on common infections

- Urine dipstick is not recommended for diagnosis of urinary tract infection (UTI) in older people and urine culture in the absence of urinary symptoms or systemic signs of infection is discouraged. Specifically, asymptomatic bacteriuria should not be treated.
- In elderly females with recurrent UTI (defined as two episodes within 6 months or three episodes within 12 months), a 3 to 6 month trial of nightly antimicrobial prophylaxis following local antimicrobial guidelines may be considered. There is no evidence supporting longer term use of prophylactic antimicrobials as it promotes emergence of resistant organisms and increases the risk of infections that may be difficult to treat.
- The majority of respiratory infections are self-limiting, including those in older people. Purulent (green/brown) sputum may suggest pneumonia or bacterial infective exacerbation of COPD (IECOPD) and antibiotics are required for these infections.