

Guidance on management of proven or suspected *Staphylococcus aureus* bacteraemia in adults

Staphylococcus aureus bacteraemia suspected or identified in the laboratory. Consider rapid identification test if available.

INITIAL MANAGEMENT – ATTENDING CLINICIAN

- Check for signs of sepsis and assess severity. Initiate fluid resuscitation if required.
- Ensure prompt administration of empirical antibiotic therapy following local policy.
- Look for potential source of infection: skin (cellulitis, ulcer, site of current or recent indwelling medical device, drug use by injection, surgical site infection), septic DVT, bone or joint inflammation (specifically paravertebral tenderness), prosthesis, urinary catheter, endocarditis (auscultate heart, examine for heart murmur or stroke in the context of sepsis and cutaneous stigmata of endocarditis), pneumonia (chest X ray).
- Consider recent medical history – hospitalisation, vascular device, drug use by injection or previous SAB.
- Consider need for further microbiology samples if evidence of infection e.g. swab from ulcer or IV device site, MSSU/CSU, sputum sample
- Discuss with senior clinician in all cases.
- Repeat blood cultures (BC) in 48-96 hours and if ongoing fever despite antibiotic therapy

CLINICAL MANAGEMENT – MICROBIOLOGY/INFECTIOUS DISEASES

- Communicate result to attending clinical team by phone and agree provisional management plan.
- Contact Infection Prevention and Control Team to provide advice to ward staff and initiate SAB investigation.
- Discuss case with patient's consultant or specialist registrar as soon as possible, make arrangements within 24-48 hours for a consultation and ensure clinical management plan is documented in notes.
- Daily review by attending clinical team and review by infectious diseases (ID) physician or clinical microbiologist at least once during course of therapy.
- Identify and document primary source of infection and remove or drain infected foci.

ECHOCARDIOGRAPHY

- Discuss the need for a transthoracic echocardiogram (TTE) with a cardiologist for all patients with SAB while the patient is receiving IV anti-staphylococcal therapy.
- Consider transoesophageal echocardiogram (TOE) in patients at high risk of endocarditis; persistent bacteraemia > 4 days, permanent intra-cardiac device, TTE negative AND repeat BC Positive, source unknown.

EMPIRICAL ANTIBIOTIC THERAPY

- Assess clinical risk to determine likelihood of MRSA considering previous MRSA, admission from residential care, wound or indwelling vascular device, community or healthcare acquired infection.
- Risk assessment **negative**, treat as **MSSA - IV flucloxacillin 2g 4-6 hourly** (assuming normal renal function).
- Risk assessment **positive**, treat as **MRSA - local vancomycin protocol**.
- Penicillin allergy – use vancomycin first line for MSSA and MRSA.
- In patients with intolerance, vancomycin allergy, treatment failure or if clinical concern regarding response discuss alternative therapy with ID physician or clinical microbiologist.

VANCOMYCIN THERAPY

- **Intermittent (pulsed) infusions:** Aim for trough of 15-20 mg/L and consider increasing the dose/ dose frequency to achieve this level.
- **Continuous infusion:** Aim for steady state concentration of 20-25 mg/L.
- In patients on concomitant nephrotoxic drugs or with impaired renal function monitor levels closely and seek specialist advice on tailoring dosage.
- If poor clinical response to vancomycin switch to an alternative agent rather than increasing the dose/dose frequency. Vancomycin MIC testing by E-test recommended. If MIC > 1.0 mg/L by E-test and patient not responding switch to alternative antibiotic and continue search for underlying focus.

