Early Management of Suspected Bacterial Meningitis and Meningococcal Septicaemia in Adults

**Early Recognition**
- Petechial/purpuric non-blanching rash or signs of meningitis
- A rash may be absent or atypical at presentation
- Neck stiffness may be absent in up to 30% of cases of meningitis
- Prior antibiotics may mask the severity of the illness

**Assess Severity & Immediate Intervention**

**Airway**
- Breathing - Respiratory Rate & O2, Saturation
- Circulation - Pulse; Capillary Refill Time (hypotension late); Urine output
- Mental status (deterioration may be a sign of shock or meningitis)
- Neurology - Focal neurological signs; Persistent seizures; Papilloedema

Secure Airway
High Flow O2
Large bore IV Cannula ± fluid resuscitation

**Additional Information**

**Warning Signs** (see refs)
- The following warn of impending/worsening shock, respiratory failure or raised intracranial pressure and require urgent senior review and intervention (see algorithm):
  - Rapidly progressive rash
  - Poor peripheral perfusion, CRT > 4 secs, oliguria and systolic BP < 90 (hypotension often a late sign)
  - RR < 8 or > 30
  - Pulse rate < 40 or > 140
  - Acidosis pH < 7.3 or BE worse than - 5
  - WBC < 4
  - Marked depressed conscious level (GCS < 12) or a fluctuating conscious level (full in GCS > 2)
  - Focal neurology
  - Persistent seizures
  - Bradycardia and hypertension
  - Papilloedema

**CT scan and meningitis** (see refs)
- This investigation should only be used when appropriate:
  - A normal CT scan does not exclude raised intracranial pressure
  - If there are no clinical contraindications to LP, a CT scan is not necessary beforehand
  - Subsequently a CT scan may be useful in identifying dural defects predisposing to meningitis

**Appropriate antibiotics for bacterial meningitis** (see refs)
- Review with microbiology:
  - Amoxicillin IV 2g qds should be added for individuals >55 years to cover Listeria
  - Vancomycin ± rifampicin if pneumococcal penicillin resistance suspected
  - Amoxicillin on the basis of microbiology results

**Steroids for bacterial meningitis** (see refs)
- Steroid therapy in adults remains contentious:
  - Consider dexamethasone 0.15mg/kg qds for 4 days started with or just before the first dose of antibiotics, particularly where pneumococcal meningitis is suspected
  - Do not give unless you are confident you are using the correct antimicrobials

**Bibliography**

**Priorities**

**No Respiratory Failure**
- Secure airway + High flow O2
- IV 2g Cefotaxime/Ceftriaxone immediately after LP
- If LP will be delayed for more than 30 minutes give IV antibiotics first

**No Raised ICP**
- Secure airway
- High Flow O2
- IV 2g Cefotaxime/Ceftriaxone
- Careful volume resuscitation
- 30° head elevation
- Management in critical care unit
- Low threshold for elective Intubation + Ventilation (cerebral protection)

**Further Interventions**
- Pre-emptive Intubation + Ventilation
- Volume support
- Inotropic/Vasopressor Support

**Careful Monitoring & Repeated Review**

**Priority Investigations**
- FBC; U+E; Blood sugar, LFTs; CRP
- Clotting profile
- Blood gases

**Microbiology**
- Blood culture
- Throat swab
- Clotted blood
- EDTA blood

**Public Health**
- Notify CCDC
- If probable or confirmed meningococcal disease, contact CCDC urgently regarding prophylaxis to contacts
- Notify microbiology
- Isolate patient for first 24 hours

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