BRITISH INFECTION SOCIETY

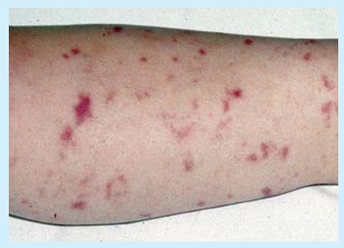
Meningitis Research Foundation

Second Edition

Early Management of Suspected Bacterial Meningitis and Meningococcal Septicaemia in Immunocompetent 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**



Courtesy: Dr A Riordan

typical meningococcal rash

Assess Severity & Immediate Intervention[a]

- **A**irway
- **B**reathing - Respiratory Rate & O_2 Saturation
- **C**irculation - 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 O_2

Large bore IV Cannula ± fluid resuscitation

Priority Investigations:

- FBC; U+Es; Blood sugar, LFTs; CRP
- Clotting profile
- Blood gases

Microbiology:

- Blood culture
- Throat swab
- Clotted blood
- EDTA blood for PCR

Predominantly Meningococcal Septicaemia

- Do not attempt LP
- IV 2g Cefotaxime or Ceftriaxone
- Call critical care team for review

Predominantly Meningitis[b,c,d]

- Assess patient carefully before performing LP
- Call critical care team if any features of raised intracranial pressure, shock or respiratory failure
- If uncertain ask for senior review
- Monitor and stabilise circulation

Signs of Shock[a]

YES NO

No Raised ICP
No Shock
No Respiratory Failure[a,b]

Signs of Raised ICP[a,b]

Priorities

- Secure airway + High flow O_2
- Volume resuscitation
- Senior review
- Management in critical care unit

Poor response

Good response

Further interventions

- Pre-emptive Intubation + Ventilation
- Volume support
- Inotropic/ Vasopressor Support
- Consider activated protein C[12]
- Good glycaemic control[13]
- In refractory circulatory failure, physiological replacement corticosteroid therapy may be beneficial[14]

Lumbar puncture[a,b]

- IV 2g Cefotaxime/ Ceftriaxone immediately after LP
- Consider corticosteroids[d]
- if LP will be delayed for more than 30 minutes give IV antibiotics first

Priorities

- Secure airway + High flow O_2
- Defer lumbar puncture
- IV 2g Cefotaxime/Ceftriaxone
- Consider corticosteroids[d]
- Careful volume resuscitation
- 30° head elevation
- Management in critical care unit
- Low threshold for elective Intubation + Ventilation (cerebral protection)

Careful Monitoring[a] Repeated Review

Public Health/Infection Control

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

** Community acquired meningitis in the immunocompetent host. In the immunocompromised seek additional expert advice*

†CPHM in Scotland

Additional Information

[a] 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 (fall in GCS > 2)
- Focal neurology
- Persistent seizures
- Bradycardia and hypertension
- Papilloedema

[b] 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

[c] Appropriate antibiotics for bacterial meningitis

(see refs)

Review with microbiology:

- Ampicillin IV 2g qds should be added for individuals >55 years to cover Listeria
- Vancomycin ± rifampicin if pneumococcal penicillin resistance suspected
- Amend antibiotics on the basis of microbiology results

[d] Corticosteroids in adult meningitis (see refs)

- 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
- Stop the dexamethasone if a non-bacterial cause is identified

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