Q3

A two month old infant has been brought in following a brief seizure. She has had coryzal symptoms and high fevers for two days. She has no relevant past history and no allergies. On examination: HR 110, BP 80/45, Temp 39.7. There is no rash & no clear focus of infection but the child is ill-appearing and drowsy.

(1) What investigations are required?

| Investigation | Justification |
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A lumbar puncture is performed

CSF white cell count
Neutrophils 120 (nil)
Lymphocytes 25 (<5)
CSF red cell count 200
CSF Protein 1.2 (< 0.4 g/L)
CSF glucose 0.4 (> 2.5 mmol/L)

(2) Interpret these results

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(3) List and justify the medications you would use to treat this child

| Medication | Justification | Dose |
|---|---|---|
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(4) A senior nurse complains to you that one of the junior doctors involved in this case has been caught stealing a box of ciprofloxacin. A formal incident report has been filed and the nurse wants you to “deal with the JMO”. The doctor says he only wanted to take some as prophylaxis against possible meningococcus.

What key principles should you consider in your discussion with the JMO?

Answer - febrile child seizure

A two month old infant has been brought in following a brief seizure. She has had coryzal symptoms and high fevers for two days. She has no relevant past history and no allergies. On examination: HR 110, BP 80/45, Temp 39.7. There is no rash & no clear focus of infection but the child is ill-appearing and drowsy.

(1) What investigations are required?

| Investigation | Justification |
|---|---|
| WCC (FBC)<br><br>Other inflammatory markers – CRP etc | At 2 months most would consider too young to assess on purely clinical grounds.<br><br>Could comment that WCC/CRP do not confirm/exclude SBI |
| Electrolytes | Sick child – possible abnormality of fluids in/out |
| Urine | Part of septic workup – especially as going to give antibiotics |
| CSF | Part of septic workup. While this could be a “simple febrile convulsion” with another source of sepsis LP is mandatory in this setting |
| Blood culture | Sepsis workup |

A lumbar puncture is performed

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Neutrophils 120 (nil)
Lymphocytes 25 (<5)
CSF red cell count 200
CSF Protein 1.2 (< 0.4 g/L)
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(2) Interpret these results

Highly suggestive of bacterial meningitis. Likely a “traumatic tap” but ratio of RBC:WBC still indicates too many WBCs

(3) List and justify the medications you would use to treat this child

| Medication | Justification | Dose |
|---|---|---|
| Cefotaxime | Could choose ceftriaxone though under 3 months usually cefotaxime (hepatic immaturity) | 50mg/kg 6th hourly<br><br>(ceftriaxone 100mg/kg 12th hourly) |
| Ben Penicillin | To cover listeria | 60mg/kg 4th hourly |
| Vancomycin | For resistant S pneu – local practice varies – depends on local prevalence. Some wait for CSF gram stain or antigen studies | 30 mg/kg 12th hourly |
| Dexamethasone | Give before or with antibiotics. Reduce hearing loss in Hib meningitis (JAMA 1997). Decrease poor outcomes (GOS) & death (NEJM 2002) | 0.15 mg/kg |
| Paracetamol | For fever | 15mg/kg |

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What key principles should you consider in your discussion with the JMO?

- Non-judgemental, non-confrontational, confidential, document discussion.
- "Stealing" drugs is potentially serious – disciplinary/employment ramifications
- Doctor needs counselling - ?apology etc
- Concern about infection not entirely unreasonable though prophylaxis only indictaed if meningococcus confirmed & close exposure (e.g. suctioning, intubation)

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