It is important to normalise CO₂ before the naloxone is given because adverse events such as ventricular arrhythmias, acute pulmonary oedema, asystole or seizures may otherwise occur. This is because the opioid system and the adrenergic system are interrelated. Opioid antagonists and hypercapnia stimulate sympathetic nervous system activity. Therefore if ventilation is not provided to normalise carbon dioxide prior to naloxone administration, the sudden rise in adrenaline (epinephrine) concentration can cause arrhythmias.

11.9 APPROACH TO THE CHILD WITH METABOLIC COMA

Metabolic coma can arise from a variety of conditions, including a number of rare inborn errors of metabolism. An idiopathic form, Reye’s syndrome, was found to be associated with aspirin ingestion, which is now banned from routine use in children under 16 years of age.

These illnesses, now called “Reye-like” conditions, often present with a rapidly progressive encephalopathy, vomiting, drowsiness and convulsions or coma. There may be associated hepatomegaly (from fatty change), hypoglycaemia, abnormal liver enzymes or hyperammonaemia. In a case of otherwise unexplained coma with a GCS of <12 a key urgent investigation is a plasma ammonia. Interpretation of the level can be difficult as can specific treatment of the hyperammonaemia. In this event seek advice from a specialist in inherited metabolic disease and the paediatric intensive care unit.

11.10 APPROACH TO THE CHILD WITH MALARIA

Plasmodium falciparum causes 95% of deaths and most severe complications. It is transmitted by the bite of an infected Anopheles mosquito, and less commonly by infected blood transfusion, needle stick injuries or by the transplacental route.

The clinical features of severe disease include reduced conscious level, convulsions, acidosis and severe anaemia. Cerebral malaria may produce encephalopathy, rapid-onset coma and raised intracranial pressure. Diagnosis requires microscopy of thick film (quick diagnosis) and thin film (species identification).

Emergency Treatment of Cerebral Malaria

- Reassess ABCD
- Intravenous quinine loading dose 20 mg/kg over 4 hours in dextrose 5%.
  - Give with ECG monitoring.
- Also give antibiotic, e.g. intravenous cefotaxime.
- If Hb < 5 g/dL consider transfusion, especially if there are signs of heart failure.

11.11 APPROACH TO THE CHILD WITH SYSTEMIC HYPERTENSIVE CRISIS

See Section 12.7.

11.12 STABILISATION AND TRANSFER TO DEFINITIVE CARE

After the child has been stabilised and conditions such as hypoglycaemia, meningitis and opiate poisoning treated as indicated, some children will remain undiagnosed.