Hypoxic insult
- Low cardiac output
- Decreased tissue perfusion
- Ischaemia

Multi-organ dysfunction

Clinical features
- Neurological
  - Abnormal neurological exam
  - Seizures
- Respiratory
  - Hypoxaemia
  - Respiratory acidosis
- Cardiovascular
  - Hypotension
  - Shock
  - Arrhythmias
  - Heart failure
  - Ischaemia
- Metabolic
  - Hypo/hyperglycaemia
  - Hypocalcaemia
  - Hypomagnesaemia
  - Lactic acidosis
- Renal failure
  - Acute tubular or cortical necrosis
  - Oliguria
  - Polyuria
  - Haematuria
- Haematology
  - Elevated nucleated RBC
  - Thrombocytopenia
  - Bleeding–DIC
  - Thrombosis
- Gastrointestinal
  - Feeding intolerance
  - Bleeding
  - Gut ischaemia–NEC

Differential diagnosis investigations, consider:
- Lumbar puncture (if coagulation profile normal)
- Bloods for chromosome analysis, ammonia, amino acids
- Urine for amino and organic acids, ketones, reducing substances
- Early NBST [repeat at usual collection date]
- Cranial US

Investigations
- Cord blood gas
- Arterial blood gas
- CXR
- Blood gas
- Echocardiography
- FBC including platelets
- LFTs
- Coagulation profile
- Blood culture

Management
- Anticipate need for resuscitation from maternal/obstetric/labour history (including CTG trace)
- Refer to QCG: Neonatal resuscitation
- Maintain breathing and circulation
- Commence Sarnat scoring for 6 hours after birth or until TH begins
- Record vital signs (TPR, BP, SpO2)
- Supportive care
- Treat seizures [refer to QCG: Neonatal seizures]
- Avoid:
  - Hypo/hyper ventilation
  - Hypoxaemia/hyperoxia (keep SpO2 ≥ 92%)
  - Hyperthermia
  - Hypotension
  - Inotropes as indicated
- Correct underlying causes of metabolic acidosis
- Nil by mouth (insert OGT/NGT)
- Maintain normal blood glucose [refer to QCG: Newborn hypoglycaemia], calcium and magnesium
- Restrict fluid intake
  - Commence glucose 10% IV at 40–50 mL/kg/day
  - Monitor urine output
  - Maintain accurate fluid balance record
- Nutritional support: TPN if/when required
- Therapeutic hypothermia (if criteria met)
  - Core temperature of 33–34 °C within 6 hours of birth for 72 hours from target temperature

Ongoing care and assessment
- Family support
- Developmental assessment
- Physiotherapy and speech therapy

aEEG: amplitude integrated electroencephalogram; BP: blood pressure; CTG: cardiotocograph; CXR: chest x-ray; DIC: disseminated intravascular coagulation; EEG: electroencephalogram; FBC: full blood count; IV: intravenous; LFTs: liver function tests; MRI: magnetic resonance imaging; NEC: necrotising enterocolitis; NGT: nasogastric tube; NBST: neonatal bloodspot screening test; OGT: orogastric tube; QCG: Queensland Clinical Guidelines; RBC: red blood cells; SpO2: oxygen saturation; TPN: total parenteral nutrition; TPR: temperature, pulse, respirations; US: ultrasound scan