

Cerebral Palsy and Seizures (CEACCP 2010)

- Collective term to describe a group of neurological disorders with varying sensory, motor and intellectual impairments.
- *"Injury to the developing brain"*
- Only about 10% of CP cases due to complicated deliveries with HIE

Incidence and Aetiology

- Incidence 1 in 500 live births (static over 30 years due to increased prem survival)
- 80% antenatal insult and 20% in first 2 years
- 70% associated with identifiable cause, rest not
- Congenital foetal
 - Prem, LBW
 - Vascular malformations
 - TORCH infections
- Congenital Maternal
 - Breech
 - PET
 - Maternal hypothyroidism
 - FAS
- Acquired
 - Kernicterus
 - Viral/Bacterial infections
 - ICH
 - Head injuries
 - Seizure disorders
- Clinical picture determined by location of lesion as well as **when** in brain development occurs

Classification of CP

- Previously classified by tone and distribution
- Spastic, dyskinetic, ataxic, mixed
- Hemiplegic, Tetraplegic etc
- Now more functionally classified

Clinical Features

- CNS
 - Intellectual and cognitive impairment (2/3)
 - Up to 50% have a seizure disorder
 - May have allodynia/hyperalgesia
- Respiratory
 - Chronic lung disease due to NRDS, chronic aspiration (dyskinetic oesophagus, bulbar palsy)
 - Weak cough
 - Prone to LRTIs
 - Scoliosis, restrictive lung disease and for pulmonale
 - TMJ dislocation due to muscle spasticity
 - Altered dentition with difficult mouth opening and instrumentation
- GIT
 - Typically malnourished
 - TMJ instability and loose teeth common
 - May have PEG in situ already
- Musculoskeletal
 - Contractures and spasticity
 - Joint dislocations and scoliosis
 - Difficult IV access
 - Osteopenic, fracture prone bones
 - Muscle contracts poorly with increased blood loss
 - High surface area to mass ratio, high temperature loss
- Urological

- Neuropathic bladders, prone to UTIs

Treatment

- Drug
 - Anticonvulsants – Very common. May be inducers. Decrease MAC and are sedative. Hepatic, blood and GI side effects
 - Antispasmodics – Baclofen very common as GABA-B agonist. Can be oral or intrathecal pump (last 7 years, refill 3-6 monthly). May have withdrawal from baclofen postop. Botox injected into spastic muscle groups
- Surgical
 - Tenotomies, arthrodeses, osteotomies, tendon transfers, scoliosis correction

Operative Concerns

Preoperative

- May have had multiple hospital experiences, anxiety etc
- Comorbidities common
- Cardiorespiratory function needs special attention and assessment. CXR essential
- Hydration status
- Chronic meds to continue
- Sedative premed to be avoided
- May need preoperative optimization with physiotherapy and dietetics input

Intraoperative

- Sux safe – Although 30% May have extrajunctional receptors, no significant change in K
- NDMR less potent due to upregulation of receptors

- High incidence of GOR – RSI an option but no proven benefit over gas induction with 20-30 degree head up
- May have reduced MAC requirement of up to 30%

Postoperative

- Need high dependency care
- Prone to aspiration, apnea, hypoxia, hypovolaemia and hypothermia
- Analgesia difficult due to communication
- Postoperative spasms can be painful. Regional techniques with extradural opioids or Clonidine are useful