Plan

- What is it, how does it work?
- Who is it for?
- How is it done?
- Evidence base
- Pros and cons
- Case study
Baclofen

- **GABA derivative (inhibitory neurotransmitter)**
  - Presynaptic inhibitory effect on the release of excitatory neurotransmitters
  - Postsynaptically decreases the firing of motor neurones

- **Effective orally but frequent side effects**
  - Drowsiness, confusion, dizziness, generalised weakness
Intrathecal Baclofen

- Concentration of GABA receptors at dorsal horn of laminae 1-4
  - Intrathecal infusion is therefore delivered direct to site of action
- Intrathecal dose is approximately 1% of the oral equivalent
  - Avoids systemic side effects
- Requires pump implantation
Who is it for?

Criteria for ITB treatment:
- Severe lower limb spasticity
- Oral medication, therapy and nursing no longer managing spasticity effectively
- Responsive to ITB and no negative effect on function or posture
- Realistic, appropriate and achievable goals
- Individual/ Carer agrees with treatment goals and to be responsible for pump follow up
Areas Goal Set

- Improve transfers 9
- Relieve pain 8
- Improve sitting 7
- Use standing equipment 4
- Improve perineal access 3
- Improve sleep 2
- Lower oral drugs 1

34 goals set in 17 patients

Contraindications to ITB therapy

- Known allergy to baclofen (need to have tried it orally prior to ITB)
- IV drug user
- Concomitant significant sepsis
  - Chronic pressure sores not a contraindication
- Psychological issues
  - Needle phobia, lack of commitment, body image issues
- ? Precarious ambulation
Not contraindications…

- Pregnancy or potential pregnancy
- MRSA colonisation
- Spinal fusion (cervical approach can be used if necessary)
- Epilepsy
- LP or VP shunts
- Malnutrition
- Need for MRI scans
How is it done?

Aspects of ITB service:
- MDT spasticity assessment & measures
- Trial
- Implant
- Discharge planning
- Long term follow up
  - Pump refill and dose titration
  - 24 hour help-line
Trial procedure

- Need ITU/ anaesthetic availability
- Continue normal oral medication
- Define goals of treatment and of trial
- Perform outcome measures pre and post
- Bolus or continuous infusion
  - LP’s or temporary catheter
  - Children may have GA for catheter placement
  - Monitor vital signs every 30 mins
Pump Implant

Pump Pocket:
Abdominal Incision

Intrathecal Catheter:
Lumbar Incision

© Medtronic 2000
Programming

Computer Print Out

© Medtronic
Evidence base

- First used in 1985 for spinal cord injury
- Shown to be effective in:
  - Spinal cord and brain injury
  - Multiple sclerosis
  - Stroke
  - Cerebral palsy
- Benefit sustainable over time
- More recently used in dysautonomias, dystonias

Pros and Cons

Pros
- Extremely effective
- Flexible dosing
- No systemic side effects (particularly CNS)
- Consistent treatment
- No drug interactions
- Allows reduction of oral medications

Cons
- Surgical procedure
- Risk of complications
  - Catheter issues, infection
- Potential risks (can be fatal)
  - Overdosing
  - Withdrawal (missed refill apt)
- Limited battery life
- Minimal effect on upper limbs
- May compromise walking
- Body image issues
Case study- pre-trial assessment
Case study- post implant
MDT Management

Nurses
- Skin, Bladder, Bowel
- Drug education, Positioning

PT
- Standing/Positioning
- Stretching, Exercise programme, Splinting, FES

PWS / Carer
- Monitor aggravating factors
- Exercise / stretching
- Monitor drug effectiveness

OT
- Adaptations
- Wheelchair Positioning
- Splinting
- Role

DR
- Timing of assessments & treatments
- Drug prescribing & evaluating

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Any questions?