

The Neurogenic Bowel - Pathophysiology, Assessment and Management
Conservative management - lifestyle and rehabilitative treatments
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Functional Physical Examination (NICE 2012, Drake 2013)

- ROM of lower body for positioning on the toilet
- Mobility for ambulation to the bathroom and transfers on and off toilet
- Finger dexterity for undressing, hygiene
- Length of the patient's arms and ROM - ability to reach rectal area
- Strength in the upper and lower extremities
- Sitting balance
- PFM function - Digital PFM examination for weakness or spasm per rectum
- Superficial EMG assessment of PFM for contraction and valsava test for paradoxical PFM contractions during bearing down

Evidence for conservative management of patient with neurogenic bowel dysfunction

- Little high level evidence for any one treatment
 - Krassioukov 2010 - systematic review
 - Coggrave 2014 - Cochrane
 - Paris 2011, Awad 2011 - literature review
 - Drake 2013 - ICI guidelines
- Treatment of neurogenic bowel "has remained essentially unchanged for several decades" (Krassioukov 2010)
- ICCS neurogenic bowel evaluation and management - "Paucity of level 1 or level 2 publications" (Bauer 2012)
- Cochrane 2014 "There is still remarkably little research on this common and very significant issue" (Coggrave 2014)

Overall conservative management of neurogenic bowel

- Individualized to the patient in cooperation with caregivers - consider the time it takes for bowel care
- Establishment of a "bowel program" = all-inclusive treatment plan aimed at fecal continence (avoiding FI) and efficient evacuation (avoiding constipation) and prevention of complications (Engkasan 2013) - Balance between FI and constipation
- Multifaceted bowel programs are the first line approach (level 4) (Krassioukov 2010)
- Work as a team - MD, PT, OT, RN, dietary, others

Things it would be helpful for rehabilitation staff to know

- Motility of bowel and any treatments being used by patient for that reason
- Anorectal sensation - hypersensitivity or decrease
- EAS and or IAS defects
- Results of defecography or diagnosis of paradoxical sphincter contraction
- Physician plan of care - therapy can reinforce MD plan of care

Most researched treatments - all have level 3 evidence (Drake 2013)

- Multifaceted bowel programs
- Digital rectal stimulation
- Abdominal massage
- Electrical stimulation
- Patient and caregiver education

Optimize stool consistency (more info at www.bethshelly.com)

- Soft enough to pass easily, Solid enough to stay in rectum
- Reflexic evacuation = soft formed stool
- Areflexic evacuation (manual) = firm stool
- Fiber intake ? / Fluid intake ?
- Patients must understand factors that increase and decrease their own bowel transit

Characteristics of bowel management programs for patients with SCI (Engkasan 2013)

Bowel management in pts with SCI (Adriaansen 2015)

Common pattern of bowel training program (Benevento 2002)

Abdominal massage

- Method - make small circles starting at the right lower quadrant (appendix area) advancing clockwise to the right lower ribs, across to the left ribs and down to the left lower quadrant following the large intestine. gentle pressure, 10 times round
- Purpose - to increase or facilitate peristalsis and movement of fecal matter
- When - can be performed before / during defecation or at another time
- Evidence
 - Abdominal massage plus lifestyle advice was compared to lifestyle advice alone in patients with MS for the treatment of constipation. One outcome measure was significantly improved, one outcome measure did not change. Treatment effect stopped when treatment stopped. (McClurg 2011).
 - Bowel massage versus no massage in pts with CVA favors massage for increased BM per week. (Coggrave 2014)
 - Bowel massage in pts with SCI 15 min per days resulted in increased transit time (Ayas 2006)

Non implanted Electrical stimulation (ES) (summarized in Drake 2013, Paris 2011, Krassioukov 2010)

- Evidence that various ES techniques may increase transit time
- External abdomen ES (overnight) in pts with SCI favors treatment over no treatment for decreased bowel care time (Korsten 2004) level 1
- External abdominal ES, 25 min per day - level 2
- Functional sacral nerve root magnetic stimulation (3 studies) - SCI and Parkinson's: shorter transit times, improved bowel routine, increased rectal pressure, decreased hyperactive rectal contraction
 - Thoracic (level 4)

- Interferential electrical stimulation for constipation in children with myelomeningocele (Kajbafzadeh 2012) - 250us, 20 min, 3 times per week, over the abdomen
 - Results - frequency of defecation increased from 2.5 per week to 4.7 times per week, sphincter pressure and rectoanal inhibitory reflex significantly improved compared to sham
- Posterior tibial nerve ES - incomplete SCI (level 4)

Biofeedback for patient with neurogenic bowel dysfunction - many different types

- EMG for strength of weak PFM for FI, relaxation of spasm PFM with constipation
- EMG coordination training for paradoxical PFM contractions during bearing down
- Rectal balloon sensation training for FI, balloon expulsion retraining for constipation

Biofeedback (Paris 2011)

- 6 studies found including treatment for children with myelomeningocele (best results), MS, diabetic neuropathy
- overall 33% to 66% of patients felt the biofeedback was helpful.
- Suggests best candidates have mild to moderate disability, persistent rectal sensation, and good motivation

Conservative management (toilet sitting, biofeedback, anal plug, enemas) resulted in fecal continence in 67% of pts with spina bifida (Velde 2013)

Biofeedback for bowel dysfunction in pts with MS (Wiesel 2000)

- 2 to 5 sessions over 4 to 6 months
- Bowel retraining, medication, rectal sensation training and PFM training
- Only predictor of success was mild to moderate disability and stable disease process
- 5 of 13 pts reported marked to moderate benefit with some able to decrease medications

Other treatments

- Overall activity level - common suggestions include increasing activity level such as walking if able to increase peristalsis but there is little evidence this helps. (Paris 2011)
- Patient education and individual instruction in bowel care results in short term (less than 6 months) improvements in bowel function. (Harari 2004)
- Collection and containment (Cottenden 2013)
 - Absorbent pads - difficult to contain large FI, concern with odor
 - Cotton ball at the rectum - helps hold small FI in standing patients (not in w/c pts)
 - Anal plugs - level 3 evidence of success but may be uncomfortable in adults
 - Rectal trumpet - level 3
 - External anal pouch - level 3 but should not be used on broken or thinned skin
 - Rectal catheter

Patient suggestions - Have a cleanup kit with them at all times

- Change of cloths
- Wet wipes and plastic bag for dirty wipes and cloths
- Pads / diapers
- Over the counter anti - diarrheal or upset stomach medications

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