Managing Bowel and Bladder Issues in the Rehab Patient

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Bowel Considerations

Overall GI Function

• Interconnected
• Coordinated effort to:
  – maximize nutritional uptake
  – moderate fluid
  – electrolyte balance
  – eliminate waste
• Can be too fast or slow
Normal Defecation Process

- Uses reflexes and voluntary control
- Defecation reflex—peristalsis of the colon moves feces to rectum, distention, afferent signals to myenteric plexus—results in cord response to close glottis, lower diaphragm, contract abdominal muscle called Valsalva maneuver in voluntary defecation
- Peristaltic waves begin in colon and force feces to rectum with reflex contraction mediated by pelvic splanchnic nerves from S2-S4—intensifies peristaltic waves
- Rectal reflex relaxes internal sphincter, contracts external sphincter
- Pelvic muscles relax simultaneously with sphincters to expel feces
- After emptying, pelvic floor rises, anal sphincter recovers

Often begins with your morning coffee...

And ends with a trip to the bathroom....
Bowel Initial Assessment

• **History**
  - Principal Diagnosis and Comorbidities
  - Prior patterns—time of day, triggers, use of laxatives
  - Medical history—constipation, diverticulosis
  - Normal intake of food and fluid
  - Normal activity pattern
  - Medication use—narcotics and others

• **Examination**
  - Bowel sounds
  - Abdominal distention
  - Appearance of stool
  - Fecal impaction, hemorrhoids, rectal prolapse

Neurogenic Bowel

• Upper Motor Neuron Bowel—Reflexive
  - Present in injury at T12 or above
  - Sacral reflex arc is intact
  - Anal sphincter remains closed, but a reflex BM may occur at any point.

• Lower Motor Neuron Bowel—a reflexive or flaccid
  - Present in injury below T12
  - Sacral reflex arc absent
  - Flaccid rectal sphincter with high risk of incontinence/seepage

Achieving a clean bowel

• Create a balance between fully evacuating the bowel and increasing bowel motility that might lead to diarrhea
• Combination of diet modifications, increased fluid intake, laxatives, cleansing enemas, and disimpaction may be required
• This may take several days to complete
• Any bowel program cannot begin until a clean bowel has been established
Establishing a “clean” bowel

- Patients post acute care are often constipated and/or impacted when they arrive in rehabilitation.
- These conditions cause pain, discomfort, lethargy, possible obstruction.
- They can interfere with ability to participate in rehabilitation process.
- Normal bowel function contributes to the patient’s sense of dignity and self-esteem.
- Not addressing this issue can be disastrous (pain, appetite, malaise).

Expected Outcomes

- Effectiveness - The goal is to prevent episodes of bowel incontinence.
- Acceptability – Must be compatible and workable.
- Cost effective – Use of least costly medications.
- Health maintenance – Complications ? Results.

Designing an Individualized Bowel Program

- Always take the patient’s prior evacuation pattern into account.
- The program should be daily, or every other day at the same time of day.
- Any pt. that has experienced autonomic dysreflexia during digital stimulation or when passing stool should have a topical anesthetic (Xylocaine) inserted into the rectum five minutes before performing the bowel program.
- Oral medications should be given at a time that will provide the best effect with the timing of the bowel program.
Bowel Management

- Bowel program to be done daily, every other day, or other, but at the same time each day
- Digital Stimulation/ Manual Evacuation
- Insert Suppository
- Digital stimulation
- LMN injuries will require manual removal of stool secondary to flaccid bowel

Medications

- Stool softener – Docusate Sodium
- Stimulants – Senna, Bisacodyl
- Bulk formers – methylcellulose, psyllium
- Suppositories – bisacodyl, glycerin
- Enemas—Fleet, soap suds, docusate mini
- Combination laxatives—polyethylene glycol, pericolace, lactulose
Other Options
• If traditional bowel program not effective, can attempt other options:
  – PIE (Pulsed irrigation evacuation)
  – Transanal irrigation
  – ACE procedure (Antegrade colonic enema)
  – Colostomy—has other benefits including ease of management, protection of skin, decreased caregiver burden of care

Teaching Tips for the Patients
• Not necessary to have a BM daily. Every other day or even less frequent is okay, as long as health is maintained.
• Use gastrocolic reflex to their advantage
• Fluid intake of greater than 2 quarts daily
• Healthy diet including sufficient fiber (bran, fruits, vegetables)
• Activity and exercise promote bowel health
• LMN injuries may require more than one bowel program daily. Medications are different than for UMN injuries, and suppositories are ineffective.

Keys to Success
• Compliance
• Maintenance of technique
• Adequate fluid intake, diet, physical activity, and personal hygiene
• Management of constipation
• Adherence to medication schedule
• Compliance
Bladder Considerations

Normal Bladder Function: the Urinary Tract

Upper - urine production & drainage
- Kidneys - filter waste, reabsorb electrolytes, and produce urine.
- Ureters - bilateral muscular tubes that drain urine from kidneys to bladder.

Lower - micturition (voiding process)
- Bladder - reservoir for urine and hollow muscular organ with two parts
- Urethra - tube that carries urine from the bladder out of the body
Bladder Anatomy

Body: Detrusor: layers of smooth muscle (involuntary)
Base: Trigone: triangular area through which ureters & urethra pass & is contiguous with bladder neck – form internal sphincter

Normal Micturition

• **Filling and Storage phase**
  Bladder fills with urine and is stored until the stretch receptors are activated

• **Contraction phase** - 200-300 ml (up to 600) – stimulation of stretch receptors, signal to cord, initiation of voiding reflex

• **Emptying phase** – relaxation of sphincters resulting in voiding

Innervation of the Lower Urinary Tract

Three divisions of fibers:

• **Sympathetic** – Sphincter
• **Parasympathetic** – Detrusor (bladder)
• **Somatic** – Pelvic Floor Muscles
Sympathetic Nerve Fibers

- Bladder relaxation
- Internal sphincter (bladder neck & proximal urethra) constricts
- Originates at T10-L2 travels via hypogastric nerve to the bladder and sphincter

Parasympathetic Nerve Fibers

- Bladder contraction – facilitates bladder emptying
- Originates at S2-S4 travels via Pelvic Nerve to the bladder and sphincter
- Sphincter relaxation

Somatic Nerve Fibers

- **Sensory (Afferent)** stretch receptors bladder walls initiate signal that travels through pelvic and hypogastric nerves to the posterior horn of cord
- Begins with bladder pressure (full bladder)
- Message travels to sacral micturition center (sacral cord) & stimulates voiding reflex (sympathetic/parasympathetic action)
- Signal is transmitted to center in the Pons for brain participation in activity
Neurogenic Bladder Dysfunction

- Most common form of bladder impairment seen in rehabilitation settings.
- Mostly due to combined sensory and motor impairment.
- Sensory and motor messages are interrupted between the bladder and supra-spinal center.
- A dysfunction that results in the interference with the normal nerve pathways associated with urination.

Voiding Dysfunction

Failure to Store
Failure to Empty
or Both

Reflex Neurogenic Bladder

- Upper motor neuron dysfunction (tetraplegia). Sensory & motor tracts disrupted between bladder and brain – reflex voiding
- Failure to Empty
- Injury: SCI above T12
- Symptoms: some or no awareness of voiding, unpredictable voiding, voiding occurs in response to reflex (stroking, tapping, etc.), voiding dependent upon degree of bladder/sphincter dyssynergy
Areflexive Neurogenic Bladder

- Includes low paraplegia (complete LMN injury)
  - Failure to store
  - Injury to the sacral reflex arc
  - Symptoms: absent voiding reflexes, flaccid bladder and flaccid sphincter

Management Strategies

- Goals
  - Must develop a REALISTIC program for patient and caregiver according to dysfunction, capabilities & lifestyle

- Compliance to regular emptying to prevent lower and upper tract complications
Absorbent Products

- Pads, inserts, briefs, diapers
  - NOT for Urinary Retention
  - Adjunct to Timed Voiding, other treatment methods
- Pros - usually cost effective
  - Not usually covered by insurance
  - May need letter of medical necessity
- Cons - Caregiver Stress, impaired skin integrity, fungal infections, self-esteem

External Condom Catheters

- Reflex Voiding, incontinence, nocturia, post prostate surgery
- Pros – Non-invasive, ↓ risk bladder stones, measure output
- Cons – Leg bag (body image), skin breakdown (insert Foley to heal), adhesive problems, difficulty staying attached
- Correct size and type
- Daily change – wash with gentle soap, dry well
- Avoid Lotions, oil based ointments

Intermittent Catheterization

Urinary retention or overflow
- Neurogenic bladder
- Minimize urinary retention
- Safely empty bladder
- Consistent intervals (4-6hrs)
- Fluid management
- Males injured below C7 can be independent. Females below C7 may have more difficult time.
Intermittent Catheterization

- SCI below C7 can usually manage ICP
- Clean technique at home, but sterile in hospital
- Pros - ↓ risk UTI’s, bladder stones, less upper tract complications
- Cons – risk of trauma/striction, false passage, bacteruria
- Contraindications - ♀ with adductor spasms
  - Poor hand/eye coordination, poor cognition, poor motivation, urethral false passage

Indwelling Catheter

- Pros – for long term use, patients who cannot do ICP, lifestyle, caregiver resources, increase tone of detrusor
- Cons – ↑ risk UTI’s, epididymitis, bladder stones, renal inflammation, bladder cancer, detrusor contractions, false passage, sphincter spasms, urethral trauma
- Other indwelling option is suprapubic tube, with advantages for long term use

Medications

Spastic Bladder (upper motor neuron)

- Anticholinergics
  - Relaxes smooth muscle to increase bladder capacity
  - Common Side Effects - dry mouth, constipation, dry eyes, nausea, dizzy
  - Contraindicated in narrow angle glaucoma
  - Check PVR after initiating treatment
  - Ditropan (Oxybutynin), Detrol (tolterodine), Detrol LA

- Alpha Blockers
  - Decrease bladder neck and urethral resistance
  - Hytrin (terazosin), Flomax (tamsulosin)
Urinary Problems in Rehab

• Foley Catheter Issues
  – Bleeding
  – Obstruction

• Difficult Catheterization
  – Lidocaine Gel
  – Urological Consult

• No Urine Output
  – Consider dehydration
  – Consider hemodynamic compromise

Urinary Problems in Rehab

• Swollen Testicles
  – Urologic Evaluation: Epididymitis or Sarcoma, Bed rest

• Bladder Stones
  – formed from foreign body or proteus
  – Can cause hematuria, persistent UTI, obstruction of catheter

• Autonomic Dysreflexia

Autonomic Dysreflexia

• SCI above T6
• Sympathetic inhibitory impulses blocked – severe vasoconstriction→rise in BP
• Bladder distention is most common cause
• Life threatening if untreated
• Silent Dysreflexia – no symptoms—often seen during bowel program
Urinary Tract Infections

• Symptoms: elevated temperature, increased WBC, malaise, AD, spasms

• UA – Microscopic

• C&S – Comprehensive
  • Identify ALL organisms
  • Run ALL sensitivities

• Treat with Culture Sensitive Antibiotic (?)

CAUTI: 2014 Update

• CAUTI prevention is a 2014 JC NPSG

• Also focus of CDC, APIC, NHSN

• Indwelling catheter in SCI — sacred cow?

• “The duration of catheterization is the most important risk factor for developing infection. Reducing unnecessary catheter placement and minimizing the duration the catheter remains in situ are the primary strategies for CAUTI prevention.” (Lo, et al, 2014)

Complications of Antibiotics

• C-difficile - add Flagyl or oral Vanco

• Yeast - Diflucon

• Resistance – Neosporin Irrigation

• Common side effect- GI complaints

• Monitor renal function if on IM or IV routes
Bladder Management

- Largest impact on quality of life & patient outcomes
- Integral component of rehabilitation
- Interventions essential to successful outcomes
- Independent realm of nursing practice as well as collaboration with medical
- Promote continence or reduce frequency of incontinence

Consequences of a Poorly Managed Bladder

- Skin breakdown
- Urinary tract infections → sepsis
- Falls and injuries
- Dehydration
- Embarrassment, social isolation, anxiety, depression, dependence, decreased sex
- Impaired Quality of Life

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