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Medical Diagnosis/Disease: Crohn's Disease

NCLEX IV (8): Physiological Integrity/Physiological Adaptation

Anatomy and Physiology

Normal Structures

- GI tract is composed of mucosa lining, submucosa connective tissue, muscle, and serosa
- parasympathetic stimulation is excitatory (increase peristalsis); sympathetic is inhibitory (decrease peristalsis)
- enteric nervous system has Meissner plexus in submucosa (secretion/sensory) and Auerbach plexus (major nerve supply/controls movements)
- venous blood drains into the portal vein, which then perfuses to the liver (clean blood of bacteria/toxins)
- stomach and duodenum receive blood from celiac axis; the distal small intestine to mid large intestine receive blood from hepatic and superior mesenteric artery; the distal large intestine through the anus receive blood from inferior mesenteric artery
- peritoneum covers abd organs w/ parietal and visceral layers; it contains blood and lymph vessels
- GI system mainly ingests (mouth, pharynx, esophagus), digests (stomach), absorbs (small intestine), and eliminates (large intestine) food to supply nutrients to body cells
- ghrelin stimulates appetite
- stomach glands in the fundus: chief cells secrete pepsinogen (pepsin to breakdown proteins), parietal cells (HCl, water, and intrinsic factor [B12 absorption])
- small intestine (duodenum, jejunum, and ileum) is there to absorb nutrients
- large intestine (cecum, ascending colon, hepatic flexure, transverse colon, splenic flexure, descending colon, and sigmoid colon) is there to eliminate waste and absorb water and electrolytes
- liver removes bacteria and toxins from blood, secrete bile, make bilirubin

Pathophysiology of Disease

- Crohn's disease can involve any segment of the GI tract from the mouth to the anus
- exact cause unknown
- autoimmune disease
- possibly from overactive, inappropriate, or sustained immune response to environmental and bacterial triggers in a genetically susceptible person; the resulting inflammation causes widespread tissue destruction
- strongest risk factor is family hx; diet, smoking, and stress increase susceptibility by changing the environment of the GI microbial flora
- a high intake of refined sugar, total fats, polyunsaturated fatty acid, and omega-6 fatty acids seems to increase the risk for IBD
- eating more raw fruits, veggies, omega-3-rich food, and fiber decreases risk
- use of NSAIDs, abx, and oral contraceptives also increase risk
- major genes r/t Crohn's are NOD2, ATG16L1, IL23R, and IRGM
- most often involves the distal ileum and proximal colon; segments of normal bowel can occur b/t diseased portions, so-called "skip" lesions
- inflammation in Crohn's involves all layers of the bowel wall; typically, lesions are deep, longitudinal, and penetrate b/t islands of inflamed edematous mucosa, causing the classic cobblestone appearance
- since the inflammation goes through the entire wall, microscopic leaks can allow bowel contents to enter the peritoneal cavity and cause abscesses or peritonitis; fistulas are common

NCLEX IV (7): Reduction of Risk

Anticipated Diagnostics

Labs

- CBC
- CMP
- Erythrocyte sedimentation rate
- Serum chemistries (Na, K, Cl, Mg, Ca)
- Testing of stool for occult blood and infection
- C-reactive protein

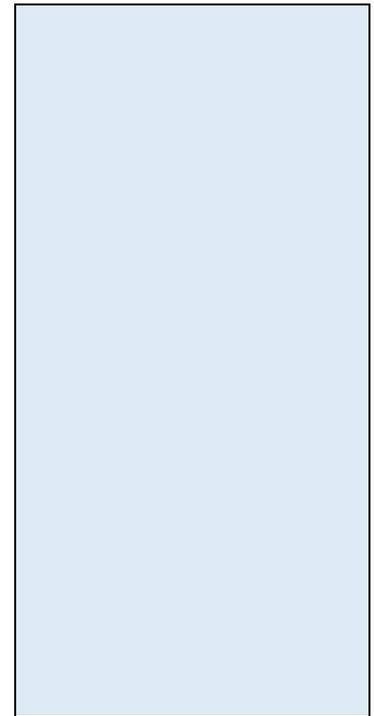
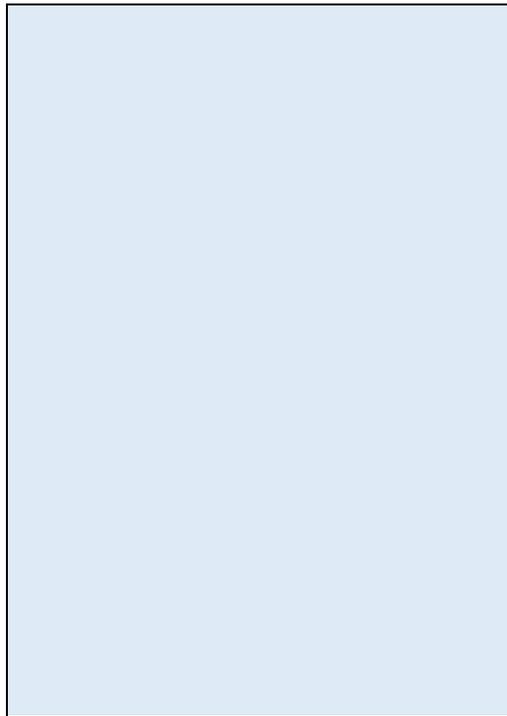
Additional Diagnostics

-H&P

- Capsule endoscopy
- Radiologic studies w/ barium contrast
- Sigmoidoscopy and/or colonoscopy w/ biopsy
- U/S studies

-biliary tract consists of gallbladder and ducts that connect the liver, gallbladder, and duodenum; the gallbladder holds bile (releases in presence of fat in upper duodenum); hepatic ducts receive bile from the canaliculi in the liver lobules which merge with the cystic duct from the gallbladder to form the common bile duct

-pancreas is an exocrine and endocrine gland: exocrine (release of enzymes like amylase [starch to disaccharides], chymotrypsin [protein digestion], lipase [fat digestion], and trypsinogen [protein digestion]); endocrine (beta cells for insulin and amylin, alpha cells for glucagon, delta cells for somatostatin, and F cells for pancreatic polypeptide)



NCLEX II (3): Health Promotion and Maintenance

NCLEX IV (7): Reduction of Risk

Contributing Risk Factors

- Genetic susceptibility
- Fatty, processed diet
- Smoking
- Stressful environment
- Living in urban area
- White and Ashkenazic Jewish origin
- Living in Northern Hemisphere and industrialized nations

Signs and Symptoms

- Diarrhea
- Weight loss
- Abd pain (cramping)
- Fever
- Fatigue
- Rectal bleeding (sometimes)

Possible Therapeutic Procedures

Non-surgical

- PN (short bowel syndrome)

Surgical

- Bowel resection w/ re-anastomosis
- Stricture-plasty
- Abscess I&D

Prevention of Complications

(What are some potential complications associated with this disease process)

- Fluid/electrolyte imbalance (replacement therapy)
- SBS (stricture-plasty)
- Exacerbation (stress management/follow diet)

NCLEX IV (6): Pharmacological and Psychosocial/Holistic

NCLEX IV (5): Basic Care and Comfort

NCLEX III (4):

Parenteral Therapies

Anticipated Medication Management

- Aminosalicylates (decrease inflammation by suppressing proinflammatory cytokines)
- Antimicrobials
- Biologic therapies
- Corticosteroids
- Immunomodulators
- Analgesics
- Crystalloid rehydration

Non-Pharmacologic Care Measures

- Physical and emotional rest
- High-calorie, high-vitamin, high-protein diet
- EN during exacerbations
- Referral for counseling or support group

Care Needs

What stressors might a patient with this diagnosis be experiencing?

- Providing for family while hospitalized
- Lifelong diet and health modifications
- Lifelong medication regimen
- Difficulty coping w/ dx and impact on family and routine activities

Client/Family Education

NCLEX I (1): Safe and Effective Care Environment

List 3 potential teaching topics/areas

- Diet modification: high-calorie, high-vitamin, high-protein.
- Adherence to medication regimen.
- Follow-ups w/ primary care and gastroenterologist.

Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)

- RN, hospitalist, gastroenterologist, general surgeon, dietician, nutritionist, PT/OT, community health, case management

Potential Patient Problems (Nursing Diagnoses)

To Be Completed Before the Simulation

Anticipated Patient Problem: Deficient Fluid Volume

Clinical Reasoning: SBP <90, HR >100, sluggish skin turgor, "I feel thirsty all the time," loose and liquid stools > 3 in 24h, urine output < 30 mL/hr, diaphoresis from temperature > 38 C and abd pain that is 7/10 and cramping.

Goal 1: Pt will have a SBP >90 during my time of care.

Goal 2: Pt will pass < 3 soft, formed stools during my time of care.

Relevant Assessments	Multidisciplinary Team Intervention
(Prewrite) What assessments pertain to your patient's problem? Include timeframes.	(Prewrite) What will you do if your assessment is abnormal?
Auscultate bowel sounds q4h.	Administer antidiarrheal medications as prescribed, ordered, and PRN.
Assess BP, HR, and orthostasis q4h.	Administer IVF as prescribed, ordered, and continuously.
Assess mucous membranes q shift.	Encourage brushing teeth BID and PRN.
Assess urine output q4h.	Encourage 1.5 L to 3 L oral intake of fluids during the shift and PRN.
Monitor serum electrolytes (Na, K, etc.) q shift.	Administer replacement electrolytes as prescribed, ordered, and PRN.
Assess temperature q4h.	Administer antipyretics as prescribed, ordered, and PRN.

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain: ABD

Clinical Reasoning: Restlessness, abd pain that is 7/10 and cramping, diaphoresis, guarding behavior, facial grimacing during movement and shifting in bed, HR >100, RR >20, not requesting analgesics around the clock.

Goal 1: Pt will have an abd pain score <4/10 by the end of my care.

Goal 2: Pt will verbalize understanding of following an adequate analgesic regimen to recover quicker during my time of care.

Relevant Assessments	Multidisciplinary Team Intervention
(Prewrite) What assessments pertain to your patient's problem? Include timeframes.	(Prewrite) What will you do if your assessment is abnormal?
Assess abd pain and characteristics (quality, perseverance, onset, radiation, severity, and timing) q4h and PRN.	Administer analgesics (nonopioid and opioid) as prescribed, ordered, and PRN.
Auscultate bowel sounds q4h.	Administer corticosteroids and immunosuppressants as prescribed and ordered.
Assess understanding of an analgesic regimen PRN.	Educate on verbalizing pain early and requesting analgesics around the clock PRN.
Assess dietary intake status q shift.	Recommend alterations in diet (high-calorie, high-vitamin, high-protein) prior to mealtimes and PRN.
Assess understanding of nonpharmacologic analgesic techniques PRN.	Educate on use of diversional activities (listening to music, playing video games, meditation, breathing exercises) PRN.
Assess effectiveness of administered analgesics and distraction techniques q4h and PRN.	Respond to reports of pain immediately and notify provider of need for higher doses or more potent analgesics PRN.

To Be Completed During the Simulation:

Actual Patient Problem: Deficient Fluid Volume

Clinical Reasoning: BP 100/60, HR 114, IVF of NS 1000 mL infusing at 150 mL/hr, serosanguineous effluent in ostomy bag, typed and cross-matched for two units of PRBCs, hgb 7, hct 21%.

Goal: JL will maintain an SBP >90 during my time of care.

Met: Unmet:

Goal: JL will have Hgb and Hct WNL by the end of my care.

Met: Unmet:

Actual Patient Problem: Acute Pain: Epigastric and RLQ

Clinical Reasoning: Hx of Crohn’s disease w/ intermittent gastritis, HR 114, RR 22, 6/10 abd pain that is “very sore and crampy” at the “top of my stomach,” stress makes pain worse.

Goal: JL will report abd pain at <4/10 by the end of my care.

Met: Unmet:

Goal: JL will verbalize understanding of ways to reduce stress effectively by the end of my care.

Met: Unmet:

Additional Patient Problems: Risk for Allergy Reaction, Risk for Bleeding, Impaired Comfort, Anxiety, Deficient Knowledge: Crohn’s Disease

Below will be your notes, add more lines as needed. **Relevant Assessments:** Indicate pertinent assessment findings.
Multidisciplinary Team Intervention: What interventions were done in response to your abnormal assessments?
Reassessment/Evaluation: What was your patient’s response to the intervention?

Patient Problem	Time	Relevant Assessments	Time	Multidisciplinary Team Intervention	Time	Reassessment/Evaluation
Deficient Fluid Volume	1500	BP 100/60, HR 114, IVF of NS 1000 mL infusing at 150 mL/hr, serosanguineous effluent in ostomy bag, typed and cross-matched for two units of PRBCs, hgb 7, hct 21%.	1530	Delegated AP to pick up PRBCs, lowered HOB	--	--
""	""	""	1545	Administered PRBC transfusion	1600	BP 104/62, RR 20, HR 96, 360 mL blood intake, 950 intake total for shift so far
Acute Pain	1500	Hx of Crohn’s disease w/ intermittent gastritis, HR 114, RR 22, 6/10 abd pain that is “very sore and crampy” at the “top of my stomach,” stress makes pain worse	1630	Administered acetaminophen 650 mg PO	0800	T 37 C, HR 114, R 22
Impaired Comfort	1520	“Feeling more lightheaded and dizzy”; “I feel like I am going to faint and throw up”	1525	Administered O2 via NC at 2 L/min, provided emesis basin	1530	“I feel better”, BP 104/62, RR 20, HR 96
Risk for Allergy Reaction	1602	“I was feeling so chilly”; “I have a H/A and my body aches all over. Could you bring me some Ibuprofen?” T 38.8 C, RR 22, BP 103/60, 15 mins into PRBC transfusion	1603	Stopped PRBC transfusion, educated that some people have reactions to blood transfusions	--	--

""	""	""	1610	Notified provider of transfusion reaction, recommended prescribing an antipyretic and continuing IVF infusion of NS to KVO	--	--
""	""	""	1630	Administered acetaminophen 650 mg PO, slowed infusion of NS to 30 mL/hr to KVO as ordered	0800	T 37 C, HR 114, R 22, IV site patent w/ no pain, pallor, erythema, edema, drainage, and dressing clean, dry, intact
Risk for Bleeding / Acute Pain	1700	Gastroenterologist provided explanation of an endoscopy to visualize any active bleeding and to resolve it	0800	Gastroenterologist performed endoscopy	0900	"I feel a lot of cramping and discomfort in my stomach", 8/10 abd pain in RLQ after finishing tomato soup
Acute Pain	0900	"I feel a lot of cramping and discomfort in my stomach", 8/10 abd pain in RLQ after finishing tomato soup, RR 22, HR 114, BP 100/60	0930	Administered morphine 4 mg IVP at a rate of 1 mg/min	1000	Abd pain 2/10, not sore or crampy, RR 26, HR 110
Anxiety / Deficient Knowledge: Crohn's Disease	1030	"I am fairly stressed when I get home from work", "I don't know what else I can do to relax", job as a stock broker, up to five alcoholic drinks in one evening	1031	Used active listening, introduced alternative ways to relieve stress, educated on eating foods that are high in protein, provided information pamphlet and phone numbers for resources	1040	"I feel so much better after having talked to you", "I want to work on decreasing my stress and eating better, and these suggestions will really help"
Deficient Knowledge: Crohn's Disease	""	""	1130	Educated to avoid use of NSAIDs, increasing protein and calorie intake, eating small and frequent meals throughout the day, avoiding caffeine and high-fiber foods	1135	"Thank you for everything", "I could pack healthier lunches and bring them from home", "I could even eat with a coworker several days a week"

ATI Virtual Clinical Questions and Reflection:

- 1) Identify two members of the healthcare team collaborating in the care of this patient:
 - a. RN
 - b. Gastroenterologist
- 2) What were some steps the nursing team demonstrated that promoted patient safety?
 - a. Verifying two patient identifiers prior to administering meds.
 - b. Stopping the PRBC transfusion after recognizing the S/Sx of an allergic reaction.
 - c. Administering morphine 4 mg IVP at a rate of 1 mg/min to prevent adverse reactions like respiratory depression.
- 3) Do you feel the nurse and medical team utilized therapeutic communication techniques when interacting with individuals, families, and health team members of all cultural backgrounds?
 - a. If **yes**, describe: The nurse and medical team utilized therapeutic communication techniques when interacting with everyone by including the patient in their care. They asked the patient about her problems in a way that made her feel comfortable to share. The nursing team was also prompt in addressing the patient's concerns, from acute pain to anxiety and deficient knowledge of Crohn's disease and stress management.
 - b. If **no**, describe: _____

Reflection

- 1) Go back to your Preconference Template:
 - a. Indicate (circle, star, highlight, etc.) the components of your preconference template that you saw applied to the care of this patient.
- 2) Review your Nursing Process Form: Did you select a correct priority nursing problem?
 - a. If **yes**, write it here: Acute Pain: ABD
 - b. If **no**, write what you now understand the priority nursing problem to be:

- 3) Review your Patient Problem Form: Did you see many of your anticipated nursing assessments and interventions used? Yes, I saw many of the assessments and interventions used for pain management and stress management to prevent future exacerbations of Crohn's disease.
 - a. Were there interventions you included that *were not* used in the scenario that could help this patient?
 - i. If **yes**, describe: Two interventions that would have helped this patient would be educating on the use of an analgesic regimen to recover quicker and prevent breakthrough pain. The other intervention is to educate on the techniques of nonpharmacological pain management techniques such as listening to music, playing video games, meditation, and breathing exercises between analgesic med doses.

ii. If no, describe:

- 4) After completing the scenario, what is your patient at risk for developing?
- a. Deficient Knowledge: Crohn's Disease and Stress Management
 - b. Why? If the patient does not follow the strategies and recommendations by the nurse at the end of the scenario, moving forward, the patient may end up hospitalized again for aggravating her Crohn's disease through stress or continued use of NSAIDs, alcohol, caffeine, and poor dieting.
- 5) What was your biggest "take-away" from participating in the care of this patient? How did this impact your nursing practice?

My biggest takeaway from participating in the care of this patient was that there are many preventative strategies for lifelong illnesses, such as Crohn's disease, to prevent exacerbations and hospitalization. Once the patient was stabilized with a limited transfusion of PRBCs for deficient fluid volume and morphine for acute abd pain, the priority became education on Crohn's disease management and stress management. Exercising, removing caffeine, alcohol, NSAIDs, and making better food choices were excellent recommendations made by the nurse to the patient to facilitate growth and prevention going forward. This scenario impacted my nursing practice by making me more aware of the role that nurses have in prevention. If hospitalization can be prevented, people will live healthier, happier lives.