AACN
CCRN/PCCN REVIEW
GASTROINTESTINAL REVIEW

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GI BLEEDING
CCRN and PCCN

TEST PLAN

CCRN
- 6% (9 questions)
- Acute abdominal trauma
- Acute GI bleed
- Bowel
  - infarction/obstruction/perforation
- GI surgeries
- Hepatic failure/coma
- Malnutrition/malabsorption
- Pancreatitis

PCCN
- 5% (6 questions)
- GI hemorrhage
- GI infections
- GI motility disorders
- Hepatic failure
- Malnutrition
- Pancreatitis

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GI HEMORRHAGE

- Upper GI Hemorrhage
  - Bleed from stomach or small intestine
  - Peptic ulcer disease common cause

- Lower GI Hemorrhage
  - Distal to ligament of Treitz
  - Distal portion of small intestine to colon
  - Causes: anatomic, vascular, inflammatory, neoplastic

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### GI Hemorrhage - Etiology

- **Upper GI Hemorrhage**
  - Ulcers, erosions, acute mucosal tears, esophageal varices
  - 80% of ulcers are in duodenum
- **Lower GI Hemorrhage**
  - Colon tumor, diverticuli, hemorrhoids, AVM

### GI Hemorrhage - Clinical Presentation

- Recurring abdominal pain - burning
  - Burning
  - 80% of ulcers are in duodenum
- Vomiting fresh blood
- Loss of < 10% blood volume = no symptoms
- Loss of 10% to 20% = dizzy, orthostasis
- Loss of 20% + shock

### GI Hemorrhage - Diagnosis

- History
- Physical exam
- Coffee-grounds = esophagus, stomach, duodenum
- Maroon/red from rectum = colon
- Nasogastric tube bright red = acute
- Nasogastric tube coffee-grounds = subacute
- Upper endoscopy is BEST
- Colonoscopy

### GI Hemorrhage - Treatment

- 80% - 90% cease spontaneously
- Maintain BP and circulating blood volume
- Serial hemoglobin and hematocrit
- Large bore IV
- Fluid resuscitation = NS, LR, Packed RBCs
- Endoscopic therapy
- Angiography
- Surgery
- PPI
- High dose antisecretory therapy
- Antibiotic for H. pylori
**GI Hemorrhage – Nursing Intervention**

- Monitor hemodynamic status
- Observe for signs of continued bleeding
- Fluid and electrolyte balance
- Adequate nutrition
- Treat hypovolemic shock
- Blood studies
- 2 large bore IV or central line
- Vasopressin check for bradycardia, hypotension
- Maintain NG tube
- Emotional support

**Esophageal Varices – Clinical Presentation**

- Jaundice
- Ascites
- Elevated liver function
- Bleeding massively and painlessly
- Signs of shock
- Disoriented to coma

**Esophageal Varices – Diagnosis**

- History
- Physical exam
- Blood test looking for cirrhosis
- Endoscopy

**Esophageal Varices – Treatment**

- Control shock
- Intubation
- Vasopressin or Octreotide
- Nonselective beta blockers
- Balloon tamponade
- Endoscopy
- Surgery
- TIPS (transjugular intrahepatic portosystemic shunting)
**ESOPHAGEAL VARICES – NURSING INTERVENTION**
- Control bleeding
- Prevent/reverse hypovolemic shock
- Monitor electrolyte balance
- Monitor fluid balance
- Monitor nutritional needs
- Care of balloon tamponade

**BOWEL OBSTRUCTION**
CCRN and PCCN

**BOWEL INFARCTION, OBSTRUCTION, PERFORATION**
**COMMON CAUSES**
- Esophageal Obstruction
  - Neoplasm, Heavy alcohol intake, Smoking
- Intestinal Obstruction
  - Tumors, adhesions, foreign bodies, multiple medications, bowel surgery

**CLINICAL MANIFESTATIONS**
- Esophageal
  - Asymptomatic
  - Dysphagia, malnutrition
- Intestinal Obstruction
  - Vomiting, distention, pain, cramping, hypovolemia
  - Elevated BUN, creatinine, sodium, serum amylase, WBC
**Bowel Infarction, Obstruction, Perforation Management**
- NPO
- NGT intermittent suction
- Lab test monitoring
- Abdominal films
- Surgery for free air or complete small bowel obstruction
- Maintain fluid and electrolyte balance
- Foley
- Broad-spectrum antibiotics
- Pain management

**Hepatic Failure**

**CCRN and PCCN**

**Hepatic Failure - Pathophysiology**
- Loss of 75% to 90% of normal liver cell function
- Unable to synthesize plasma proteins (albumin and coagulation factors)
- Inability to metabolize substances (ammonia)

**Hepatic Failure - Etiology**
- Chronic advancing cirrhosis
- Fulminant hepatic failure
- Virus (Hepatitis B)
- Toxin induced (acetaminophen)
- Portal vein or hepatic vein thrombosis
- Wilson’s disease
HEPATIC FAILURE – CLINICAL PRESENTATION
- Mental status changes
- Asterixis (abnormal flapping of hands)
- Hepatic Encephalopathy
- Stage 1: slurred speech, mild confusion, disordered sleep
- Stage 2: moderate confusion, lethargy
- Stage 3: marked confusion, incoherent, arousable
- Stage 4: frank coma
- Stage 5: very deep coma, no response to stimuli

HEPATIC FAILURE – DIAGNOSIS
- Underlying liver disease
- Mental status change
- Abnormal liver function tests
  - ALT, AST, bilirubin, alkaline phosphatase, albumin, PT, PTT,
  - CT Scan of brain – cerebral edema

HEPATIC FAILURE – TREATMENT
- Reverse precipitating factors
- Administer Lactulose and neomycin, rifaxamin to change bacterial flora of colon, decrease toxic agents
- ICP (< 20mmHg) monitoring for cerebral edema
- Maintain CPP > 50mmHg
- Correct electrolyte disturbances (hypokalemia)
- Protein restriction
- Treat GI hemorrhage
- Provide IV fluid
- Prevent acute renal failure
- Liver transplant

HEPATIC FAILURE – NURSING INTERVENTION
- Frequent neurological assessment
- Monitor I & O
- Assess electrolytes
- Replace dietary protein
- Monitor respiratory status
- Give lactulose
- Prevent infection
- Emotional support
MALNUTRITION

Malnutrition Interventions
- Maintain fluid and electrolyte balance
- Maintain nutritional status
- Maintain bowel elimination status

PANCREATITIS

Pancreatitis – Common Causes
- Alcohol
- Biliary disease (gallstones)
- Drugs – thiazide, diuretics, steroids, transplant meds
- High triglycerides, hypercalcemia
- Infection
- Trauma
- 20% unknown cause
**Pancreatitis – Clinical Manifestations**

- Asymptomatic
- Agonizing pain
- Abdominal pain
- Nausea vomiting
- Foul smelling diarrhea
- Grey Turner’s (ecchymosis flank)
- Cullen’s (ecchymosis periumbilical)
- Hypovolemia

**Pancreatitis – Clinical Manifestations**

- Elevated lipase
- Elevated glucose, triglyceride
- Decreased potassium, magnesium, calcium
- CT scan of abdomen
- Abdominal ultrasound
- C-reactive protein > 150 48 hours after symptom onset

**Pancreatitis – Management**

- NPO
- IV fluids – LR or NS
- Pain control – hydromorphone
- NG tube intermittent suction
- No Demerol
- Monitor urine output
- Airway management
- TPN if NPO > 5 days
- Tube feed with NJ

**Acute Abdominal Trauma**

ccrn only
ABDOMINAL TRAUMA – COMMON CAUSES
- Motor vehicle crashes
- Head and chest injury
- Penetrating injury
- Fall
- Assault
- Sports

ABDOMINAL TRAUMA – CLINICAL MANIFESTATIONS
- Diaphragm
  - Decreased breath sounds, acute chest pain
- Esophagus
  - Epigastric pain, fever, pain with swallow
- Stomach
  - Tenderness, bloody gastric drainage
- Liver
  - Hypotension, guarding over right upper quadrant
- Spleen
  - Hypotension, tachycardia, shortness of breath
- Pancreas
  - Epigastric pain, nausea, vomiting, ileus

ABDOMINAL TRAUMA – MANAGEMENT
- Airway breathing circulation
- IV fluids to maintain SBP of 100mmHg, MAP > 60
- PRBCs
- Pain control
- Emotional support

(AHRENS) GSW TO ABDOMEN, COMPLETE COLECTOMY WITH ILEOSTOMY. WHAT NURSING MEASURES WILL BE NECESSARY?

A. Give proteolytic enzymes via tube feeding
B. Assess I & O, diminished water reabsorption occurs
C. Give proteolytic enzymes via tube feeding and emulsifying agents
D. Assess I & O, give emulsifying agents
(Ahrens) Which of the following is NOT indicated in treatment of upper GI bleed?

A. Endoscopy with coagulation of bleeding site  
B. Fluid replacement  
C. Blood transfusion  
D. Iced lavage off the stomach

(Ahrens) Esophageal varices are the result of which increased vascular parameters?

A. Hepatic arterial pressure  
B. Hepatic venous pressure  
C. Portal venous pressure  
D. Superior iliac arterial pressure

(Alegro) Nursing priorities for patient with severe pancreatitis will include

A. Start tube feeding  
B. Minimize pain medication  
C. Eliminate lipids from diet  
D. Replace calcium

(Alegro) Patient with pancreatitis, ABG 729/54/62. RR 26, shallow breath sounds. Common cause of respiratory decompensation is

A. Pulmonary embolism  
B. Acute cholelithiasis  
C. Acute respiratory distress syndrome  
D. Pleural effusion
(Allegro) Patient with bleeding esophageal varices has tamponade balloon. Nursing care includes

A. 10 pounds of traction  
B. Esophageal balloon deflated before gastric balloon  
C. Esophageal balloon released every hour to check for bleeding  
D. Both balloons deflate with 36 hours to prevent necrosis

(Kaplan) What is the leading cause of death in patients with acute pancreatitis?

A. Acute renal insufficiency  
B. Hypovolemia  
C. Respiratory depression  
D. Cardiac dysrhythmia

(Kaplan) Patient admitted for change in mental status. You note handwriting abilities have changed. This indicates which of the following?

A. Dementia  
B. Pancreatitis  
C. Diabetes insipidus  
D. Hepatic encephalopathy

(Kaplan) Postop patient has yellow hue to skin and conjunctiva. Most likely cause is which of the following?

A. Pancreatitis  
B. Hepatic failure  
C. Gallstones  
D. Adrenal insufficiency
(Kaplan) Patient with history of alcohol abuse has steady dark red blood in NG tube. Most likely cause is

A. Peritonitis  
B. Obstruction of Lower GI  
C. Esophageal varices  
D. Neoplasm