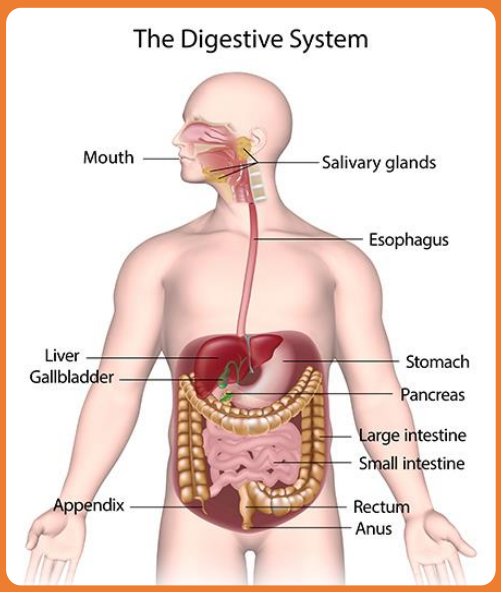
GI tract



1

MAKING ROOM ASSIGNMENTS:

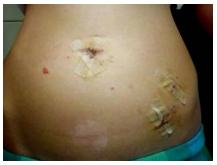
"Like illnesses" can go into the same room together
(if in the stem of the question the nclex tells you the two clients have the exact same condition).

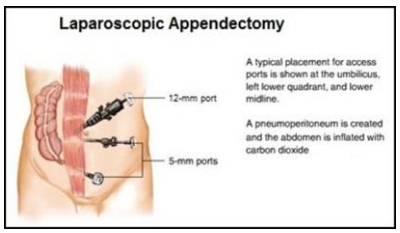
- **Question1:** the nurse cares for 2 patients with flu, the same virus, and there is not enough private rooms. Can the patients be in the same room?
- **Question2:** Can two patients with the same type (same strain) of tuberculosis be assigned for the same room?
- **Question3:** Two patients with HIV positive can be put together?

- Question3: You are caring for a client HIV positive that is in a semi-private room. Of the following, which client would you put in the room with the client with AIDS?

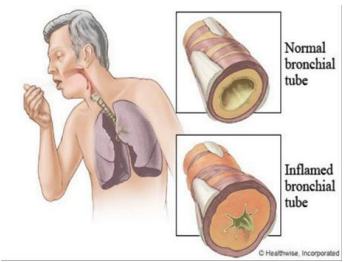
1. A client with asthma
2. A client with bronchitis
3. A client that is 8 hours post- appendectomy

2





- ➔ patient with asthma could be put together with a patient immune depressed, if necessary. Is not infectious.
- Bronchitis can be bacteria or virus
- Post appendicectomy = Fresh incision



3

- Before living the hospital you would:

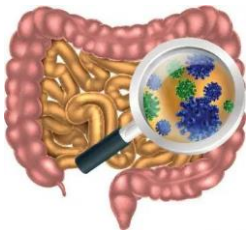
1. Tell the nurse you're giving report, the most important thing they need to know to protect your the patient.
2. Say bye to your patient.
3. Verify medical orders for your patient

4

PRIORITY question

A nurse is working in the ED and an 18-month-old little girl is admitted in the hospital diagnosed with rotavirus. She is severely dehydrated. She has not cried nor wet a diaper in 5 hours.
The doctor has written the following order: Give D5¼ normal saline with 20mEq of KCL at 20 ml's per hour per pump.

Would you carry out this order?
Why or why not?



5

ANSWER

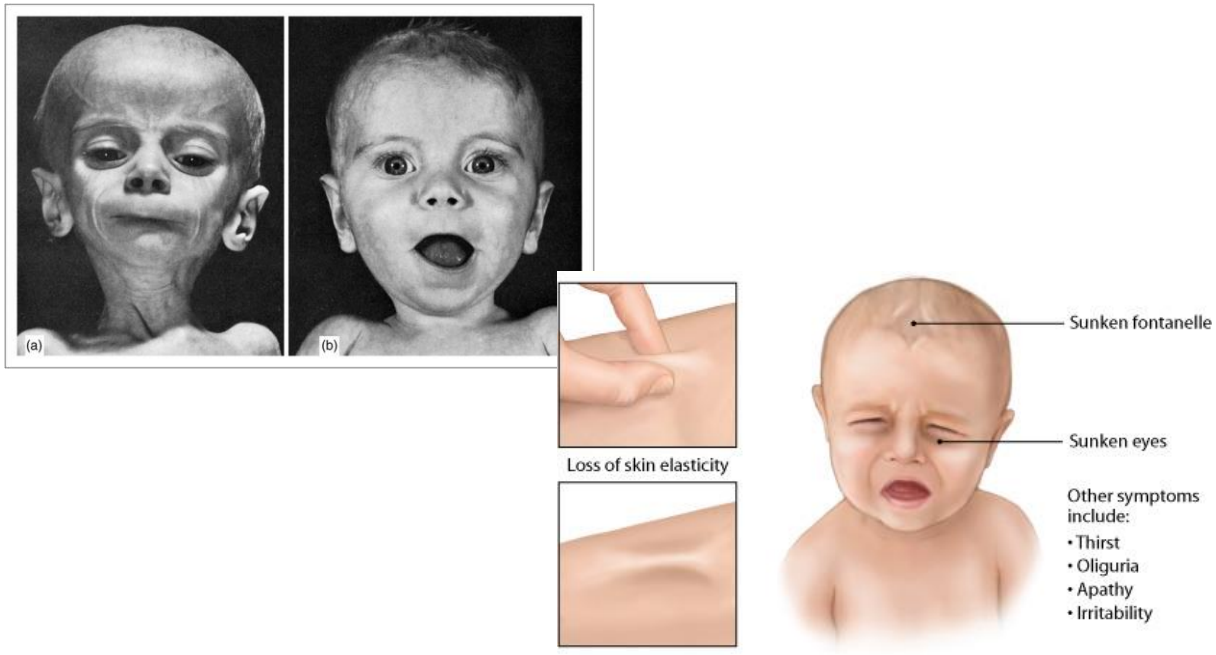
(PRIORITY QUESTION)

You working in the ED and an 18-month-old little girl comes into the hospital. She has been diagnosed with rotavirus.
She is severely dehydrated.
She has not cried nor wet a diaper in 5 hours.
The doctor has written the following order: Give D5¼ normal saline with 20mEq of KCL at 20 ml's per hour per pump.

Would you carry out this order?
Why or why not? NO
-can she excrete it?
The baby needs fluid?
Is she wetting dippers?
What should you start?
When can you add the KCL?

NCLEX: see if the order is ok. It will be you who will implement

6



7

- You are the charge nurse on an adult medical surgical unit.

You are short an RN staff member, and the nursing supervisor has sent an RN with neonatal intensive care experience to your unit.

The nurse states on arrival, "I have not worked on an adult unit for 6 years." As the charge nurse, what should you do first?

1. Send the RN back to NICU and give the nurses working on the floor already an extra client.
2. Call the nursing supervisor and demand a RN with med-surg experience.
3. Attend the shift report.
4. Assign the nurse to do nursing assistant duties

- Which of the following clients would you assign the NICU nurse that is working on your floor?

1. 4 hour post cholecystectomy client experiencing pain every 2 hours
2. Elderly client with unexplained syncope
3. Teenager client 8 hours post hypophysectomy
4. New admit diagnosed with adrenal insufficiency

8

- You are caring for a client that has hypothyroidism. Your client is scheduled to be given an AM dose of Levothyroxine (Synthroid). While you are in the client's room, she states that she's been feeling this "fullness" in her chest that started after she ate and has lasted for the last 2 hours. What should the nurse do first?

1. Administer Aluminum/Magnesium concentrate and suspension (Maalox) 30 ml.
2. Administer the Levothyroxine (Synthroid).
3. Obtain a stat ECG
4. Call the physician.

9

GASTROINTESTINAL

General Diagnostic Tests:

Upper GI:

-Looks at the esophagus and stomach with dye
-NPO past midnight
-No smoking
-smoking (increase or decrease?) stomach motility
➔ will affect the test
-smoking (increase or decrease?) stomach secretion

10

Barium Enema:

-Clear liquids

-Laxative or enemas until clear; may have to drink gallon of Polyethylene Glycol Electrolyte Solution (GoLYTELY)

- Not all patients tolerate ➔ watch the patient for weakness, etc.

Make sure client has a _____ post - procedure

Barium has to be completed removed

Gastroscopy (EGD, endoscopy):

-NPO pre

-NPO until returning of ___

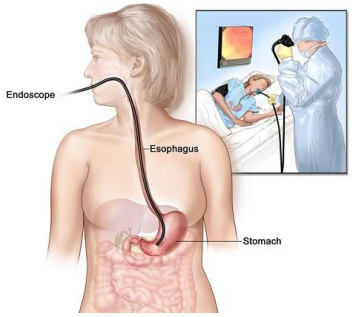
-local anesthesia=>risk of aspiration

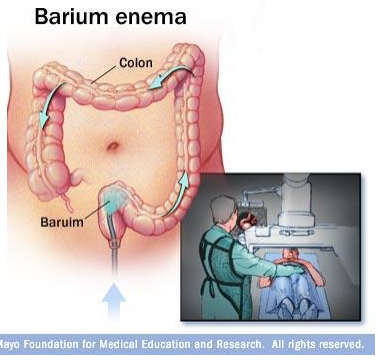
-Sedated

-Watch for perforation

s/s =>-any unusual discomfort or pain

(investigate symptoms before procedure)





11

Main functions of the liver

1) Detoxify the Body

2) Helps Blood to clot (when you have a liver question => think hemorrhage)

4) The liver synthesizes albumin.

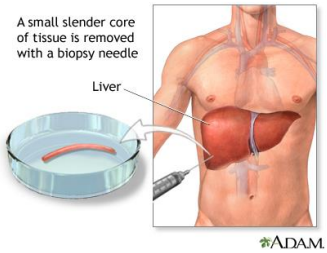
3) The liver helps to metabolize (break down) drugs. (liver problem => (↓ or ↑) medication doses?)

-ex: if patient has liver problem and receive meperidine (Demerol) 75mg => worry about RR

--Tylenol – can you give?

-if liver being attacked => bleeding

-Acetaminophen antidote => mucomyst (acetylcysteine)

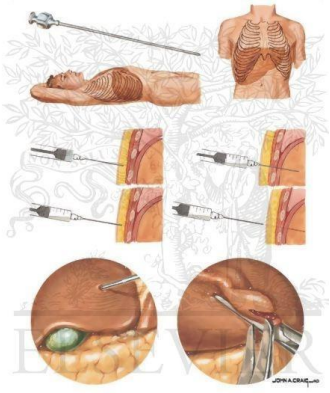


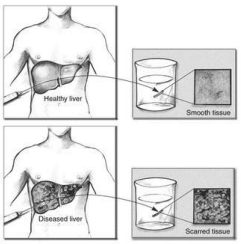
Liver biopsy

-puncture into a sick liver => worry about _____

12

Liver biopsy:





Pre procedure:

→ Clotting studies pre: PT and PTT

→ Vital signs pre *(baseline) (risk of hemorrhage)*

during procedure

→ Position?

→ Exhale and hold WHY?

-to get the _____ out of the way

Post procedure:

→ Patient lie on _____ side

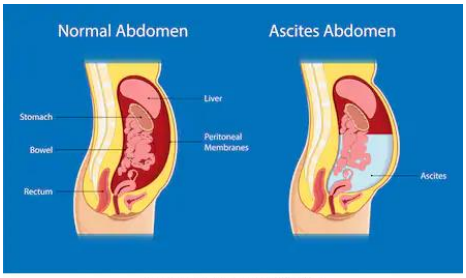
→ Vital signs (risk of _____ → BP and P (↑ or ↑?)

13

ASCITES

- How it affects vascular space?
  - Pt can become hypo or hypervolemic?
  - → check BP

Ascites → think breathing trouble



shutterstock.com • 1247788795

Paracentesis:

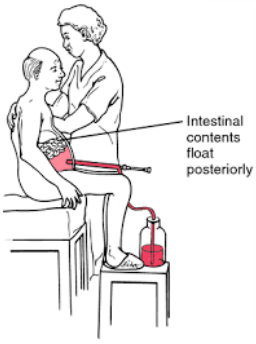
Removal of fluid from the peritoneal cavity (ascites)

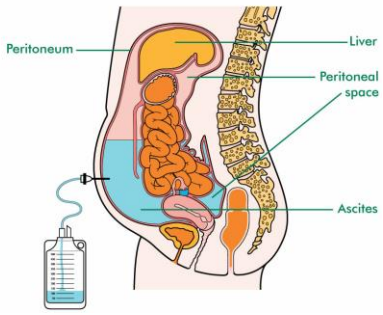
-Vital signs (fluid is in 3rd spacing) (need baseline)

-Have client void

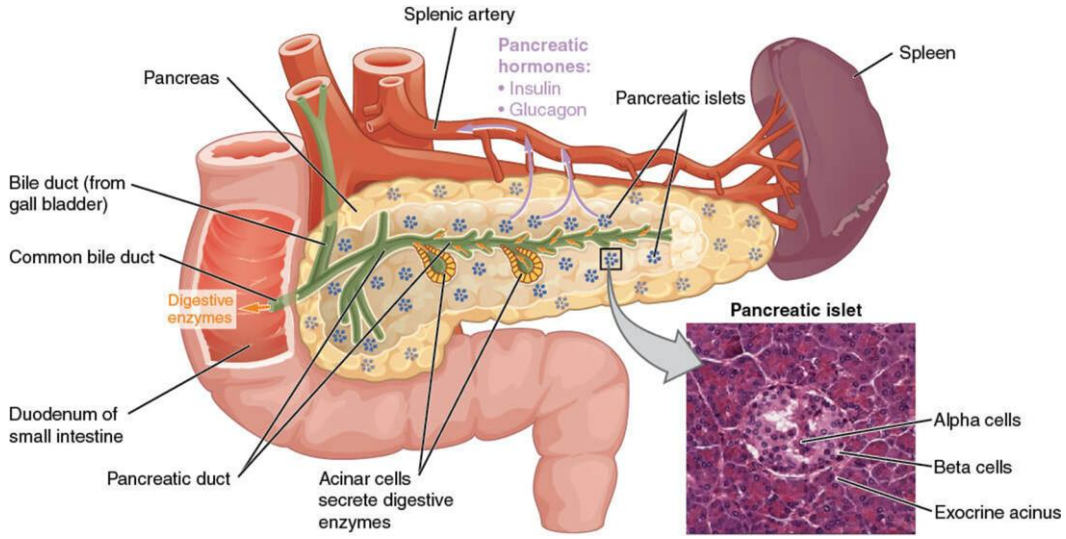
-Position

-keep checking Vital signs (is pulling fluid →*can go to shock.*





14



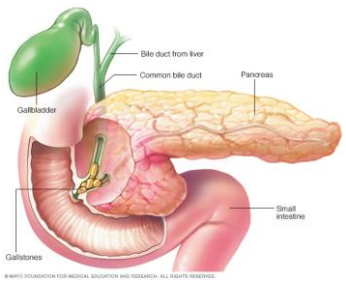
15

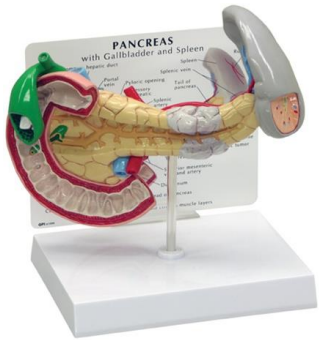
PANCREATITIS:

-The pancreas has two separate functions:

- endocrine- produces insulin
- exocrine- produces digestive enzymes

Are the enzymes activated inside the pancreas?





-> Two types of pancreatitis:

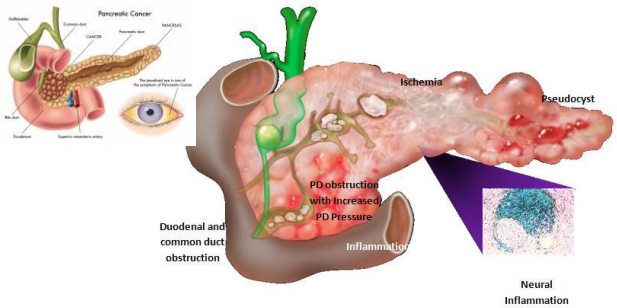
1. acute:

#1 cause=alcohol (destroys the GI tract- scar tissue/ inflammation)

#2 cause=gallbladder disease

2. chronic: #1 cause=alcohol

PANCREATITES *= AUTO DIGESTION OF THE PANCREAS*



16

Pancreatitis Signs and Symptoms:

-Pain- (Does the pain increase or decrease with eating? Why?)

-Abdominal distension/ascites (circulating pancreatic enzymes damage capillaries → ascites)

-Abdominal mass – swollen pancreas

-Rigid board-like abdomen (guarding? bleeding?)

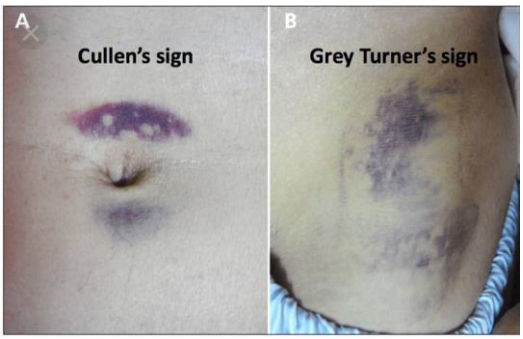
-Bruising (around umbilical area (Cullen's sign) or flank area (Gray Turner's)

-Fever (inflammation)

-Nausea/vomiting

-Jaundice (Any part of GI tract sick, other will be)

-Hypotension (Bleeding and Ascites)



17

Diagnostic:

-Serum lipase and amylase → up or down?

-WBC's → up or down?

-Blood sugar – (pancreas is sick)

-SGOT, SGPT - liver enzymes (up)

-PT, PTT - (shorter or longer?)

-Serum bilirubin (up or down?)

-Hemoglobin & Hematocrit

-go down (if bleeding)

-go up (if dehydrated)

*** Please note that all normal ranges for blood test depend on the lab performing the test.

The values listed in this book are only to be used as a reference.

18

Normal Lab Values:

- WBC: 5,000-10,000 /mm³
- Liver Enzymes:
  - SGOT=AST (8 - 40 U/L)
  - SGPT=ALT (10-30 U/L)
- Hemoglobin:
  - Male: 14-18 g/dl
  - Female: 12-16 g/dl
- Hematocrit:
  - Male: 40-54%
  - Female: 38-47%
- Amylase: 45-200 U/L (dye)
- Lipase: 0-110 U/L

19

TREATMENT:

-Control pain

-NPO and NGT to suction →to decrease secretion)

-Bed rest (Decrease gastric secretions)

-Keep the stomach empty and dry

If fluid or food enters the stomach, the pancreas will _____

Pain Medications:

-Demerol (nclex)
-Morphine Sulfate (Morphine®) and
-Fentanyl Transdermal (Fentanyl®) patches
-(patient-controlled analgesia)PCA narcotics
-Hydromorphone (Dilaudid®)
-Ketorolac (Toradol®)

(continue next slide)

- In the past, Demerol (meperidine) was the drug of choice for pain management for pancreatitis; however, due to concerns over adverse drug reactions this drug is no longer used.

- Ketorolac (Toradol) is a NSAID
  - Contraindication to give this medication include:
    - someone with active peptic ulcer disease, GI bleeding, prior to a major surgery, use during labor and delivery, intracranial bleeding, and any kidney impairment.

20

- Decrease inflammation →Steroids

→ Problems with steroids for longer time: diabetes[hyperglycemia], cushing[too many steroids]

- Decrease secretion (dry stomach)→ Anticholinergics:
  - Benztropine (Cogentin®),
  - Diphenoxylate/Atropine (Lonox®)
- Decrease stomach acid →Pantoprazole (Protonix®) (proton pump inhibitor)
  → Ranitidine HCl (Zantac®), Famotidine (Pepcid®) (H2 receptor antagonist)
  → Antacids:
- Maintain fluid and electrolyte balance
- Maintain nutritional status → sometimes need Parenteral Nutrition, then, start slowly into oral diet
- Insulin (WHY?)
  - How is the pancreas?
  - Glicemia?

21

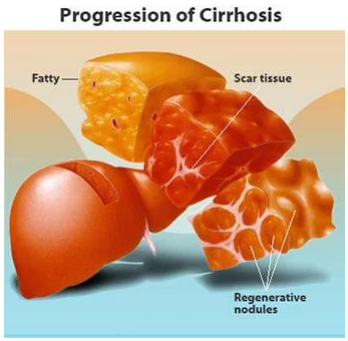
CIRRHOSIS:

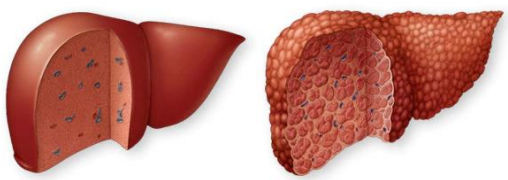
Pathophysiology:

-Liver cells are destroyed and are replaced with connective/scar tissue➔ alters the circulation within the liver ➔ the BP in the liver goes up ➔ _____

Signs and Symptoms:

-Firm, nodular liver
-Abdominal pain - liver capsule has stretched
-Chronic dyspepsia (GI upset) / Change in bowel habits
-Ascites *
-Splenomegaly (immune system has kicked in)
-liver not filtering, spleen trying to compensate
-↑ or ↓? serum albumin (sick person, and also liver disease)*
- ↑ or ↓? SGOT (AST)& SGPT(ALT)
-Anemia (sick liver -> bleeding)
-Can progress to hepatic encephalopathy/coma
(↑ ammonia) (ammonia acts like a sedative)
(ex: in Rye's syndrome; in someone who needs a liver transplant, Tylenol overdose)





22

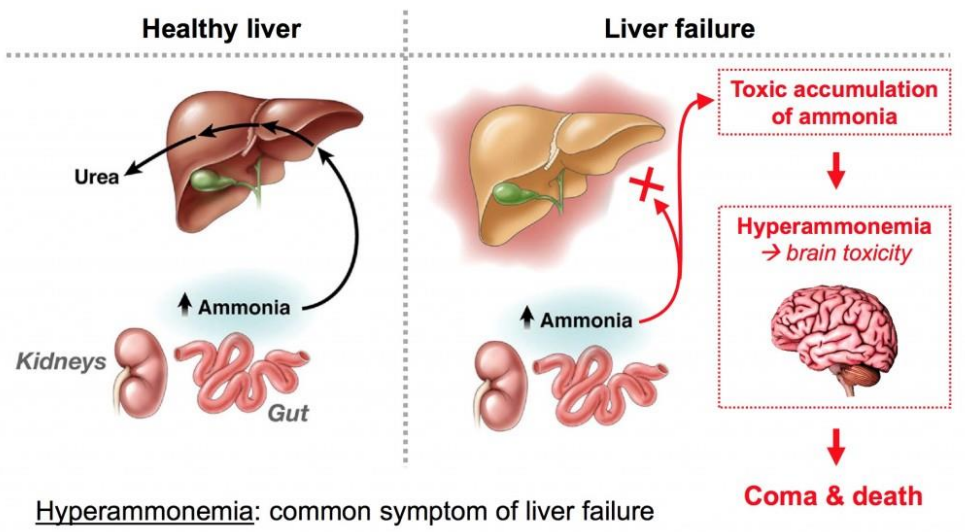
TREATMENT (Cirrhosis):

-Antacids, vitamins, diuretics
-No more alcohol (don't need more damage)
-I & O and daily weights (Any time you have ascites you have a fluid volume problem)
-Rest (toxins in the body)
-Prevent bleeding (bleeding precautions) no IM, aspirin, etc.
-Measure abdominal girth (ascites)
-Monitor jaundice (1st place to be seen ____)
- good skin care (itching)
-Avoid narcotics - liver can't metabolize drugs well when it's sick (like double dose)
-Diet:
-Decrease protein → ammonia levels go ↑ → LOC goes ____ → hepatic coma
-Low Na diet (ascites)

23

A reminder:

- ✓ Protein Breaks down to ammonia
- ✓ The Liver converts ammonia to urea
- ✓ Kidneys excrete the urea



Hyperammonemia: common symptom of liver failure

24

Hepatic Coma:

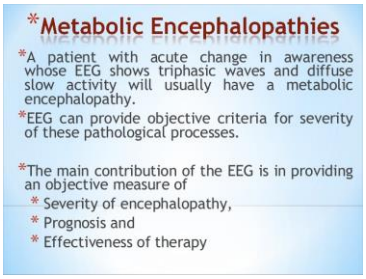
-When you eat protein, it transforms into _____, and the liver converts it to urea.

Urea can be excreted through the kidneys without difficulty.

-When the liver becomes impaired then it can't make this conversion, so what chemical builds up in the blood?
-What does this chemical do to the LOC?

Signs and Symptoms:
-Minor mental changes/motor problems
-Difficult to awake
motor disfunctions
- -Asterixis
- -Handwriting changes
- -Reflexes

-EEG
-Fetor (breath → sweet, slightly fecal odor)



-Anything that increases the ammonia level will aggravate the problem.
-Liver people tend to be GI bleeders

25

TREATMENT:

-Neomycin Sulfate (decreases ammonia-producing bacteria in the gut)

-Lactulose (Lactulax, Duphalac) (decreases serum ammonia)

-Cleansing enemas

-Decrease _____ in the diet

-Monitor serum ammonia

26

Bleeding Esophageal Varices

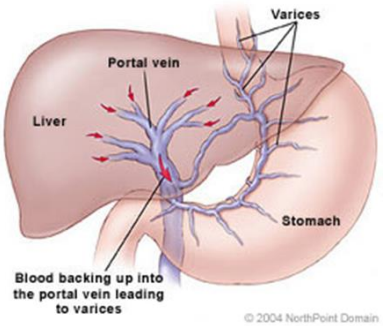
-High BP in the liver (____ HTN) forces collateral circulation to form.

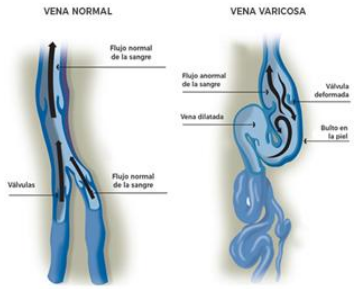
-This circulation forms in 3 different places:

-stomach, esophagus, rectum

-Usually no problem until rupture.

-When you see an alcoholic client that is GI bleeding, this is usually what it is.





27

TREATMENT:

-Replace blood

-Vital Signs

-CVP

-Oxygen (any time someone is too anemic, Oxygen is needed)

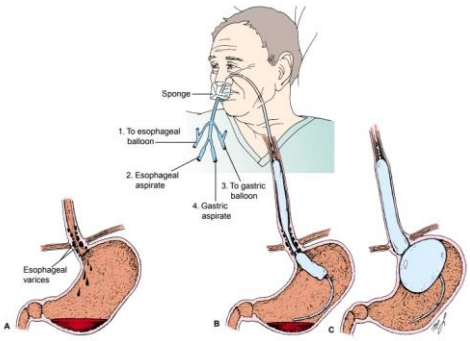
-Octreotide (Sandostatin) (lowers the BP in the liver)

-Sengstaken Blakemore Tube

-Cleansing enema (flushes any blood out)

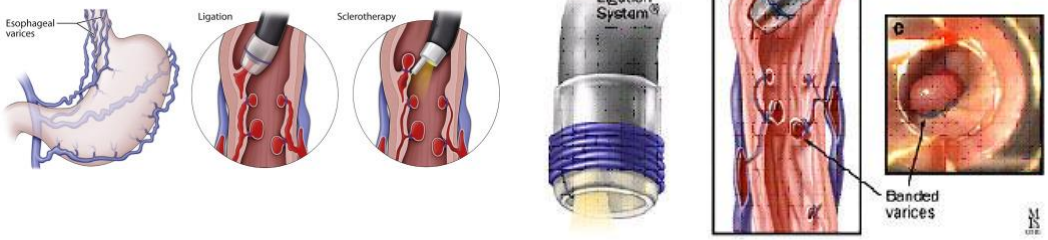
-Neomycin (Neo-Fradin) (decreases ammonia producing bacteria)

-saline lavage



28

- In esophageal variceal ligation (EVL) a rubber bandlike ligature is slipped over the varice via an endoscope, necrosis results and the varice eventually sloughs off.

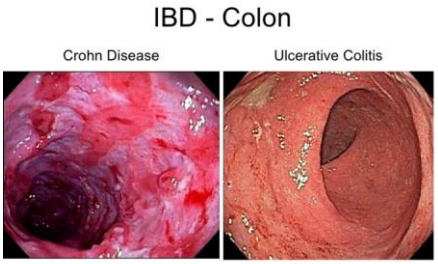


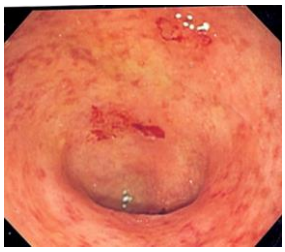
29

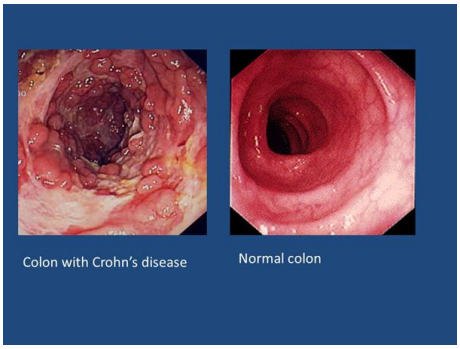
Ulcerative Colitis and Crohn's Disease:

Ulcerative Colitis ➔ ulcerative inflammatory bowel disease - just in the large intestine

Crohn's Disease ➔ also called Regional Enteritis; inflammation and erosion of the ileum - *can be found anywhere





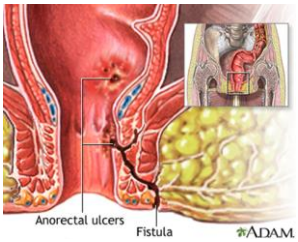


30

Inflammatory Bowel Disease
- Ulcerative colitis
- Crohn's

Signs and Symptoms:

-diarrhea
-dehydration
-rectal bleeding
-blood in stools
-weight loss
-anemic
-vomiting
-rebound tenderness
-cramping
-fever



Treatment:

- Diet:
  - -High fiber or low fiber?
    - -trying to limit motility to help save fluid
  - -Avoid cold foods or hot foods and smoking
    - -All of these can _____ motility
- Medications:
  - -Anti-diarrheals
    - -only given with mildly symptomatic ulcerative colitis clients; does not work well in severe cases
  - -Antibiotics- Sulfonamides (Gantrisin)
  - -Steroids
  - -Surgery

31

Surgery:

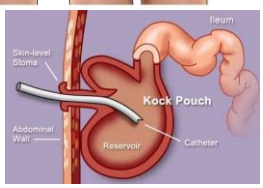
Ulcerative Colitis:

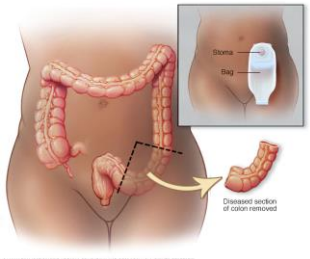
-if Total Colectomy →ileostomy formed

-Remove colon/rectum and attach ileum to anal area → temporary colostomy

-Kock's Pouch/J Pouch (no external bag; have valve)

Anytime someone has a GI surgery and they return with a temporary colostomy, the purpose of the colostomy is to allow the intestines time to rest and heal.





Crohn's: (try not to do surgery)

-May remove only the affected area.

-The client may end up with an ileostomy or a colostomy. It just depends on the area affected.

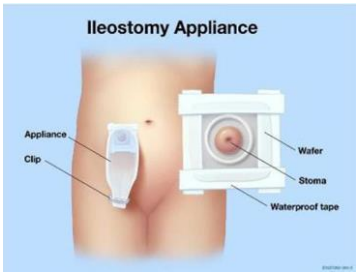
32

Post-op Care:

Ileostomy Care:

-continuous drainage

- prevent skin breakdown(PETROLEUM OINTMENT/SKIN BARRIER ON PERISTOMAL SKIN),



-avoid foods hard to digest; rough foods

-Gatorade in summer

-at risk for kidney stone

Colostomy Care:

-regulation is through bowel training and irrigation

-Why or when might we irrigate a colostomy?

-To establish _____ (R)

-For _____ (E) of hard stool.

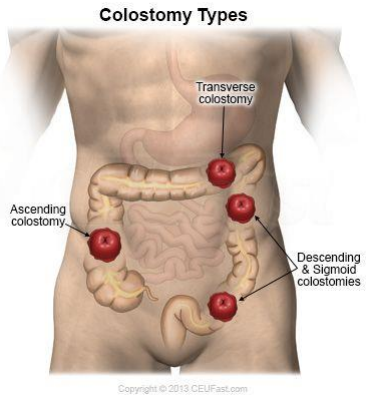
33

TO IRRIGATE or NOT TO IRRIGATE?

(1) Would we have to irrigate if the stoma is located in the:

- ascending portion?
- Transverse portion?
- descending portion?
- sigmoid portion?

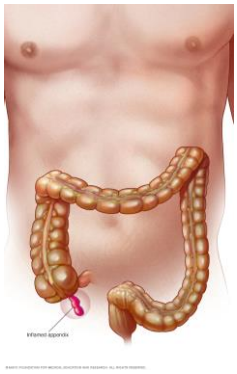
(2) What would be the purpose of the irrigation? for regulation (R) or evacuation (E)?

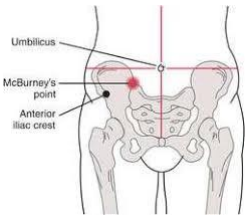


34

APPENDICITIS:

-Related to a _____fiber diet





Signs and Symptoms

-Generalized pain initially

-Eventually localizes in the right lower quadrant (McBurney's point)

-WBC's?

-Nausea and vomiting

-Rebound tenderness

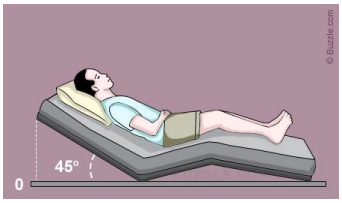
-Enema?

Treatment:

-Surgery

-Most done via laparoscope unless perforated.

-After any major abdominal surgery, what is the position of choice?



35

Peptic Ulcers:

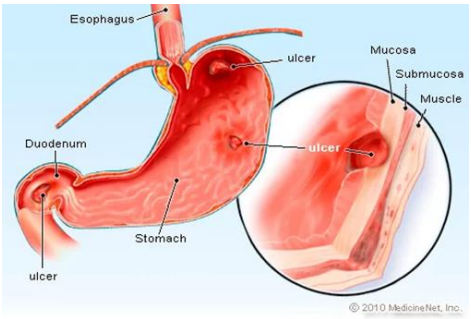
-Common cause of GI _____

-Can be in the esophagus, stomach, duodenum

-Erosion is present

S/S:

-Burning pain usually in the mid-epigastric area/back



Treatment:

Medications:

-Antacids:

-Take when stomach is empty and at bedtime - when stomach is empty acid can get on ulcer...take antacid to protect ulcer

-proton pump inhibitor; decreases acid secretions

-Omeprazole (Prilosec®), Lansoprazole (Prevacid®), Pantoprazole (Protonix®), Esomeprazole (Nexium®)

H2 antononist

-Ranitidine (Zantac®), Famotidine (Pepcid®), Nizatidine (Axid®)

-GI Cocktail (donnatel, viscous lidocaine, Mylanta II®)

-Antibiotics for H. Pylori: Clarithromycin (Biaxin®), Amoxicillin (Amoxil®), Tetracycline (Panmycin®), Metronidazole (Flagyl®)

-Sucralfate (Carafate®): forms a barrier over wound so acid can't get on the ulcer

36

Client Teaching:

-Decrease _____

-Stop_____

-Eat what you can tolerate; avoid temperature extremes and extra spicy foods; avoid irritant food

-Need to be followed for one year

-**Gastric ulcers:** laboring person; malnourished, pain is usually half hour to 1 hour after meals; food doesn't help, but vomiting does; vomit blood

-**Duodenal ulcers:** executives; well-nourished; nighttime pain common and 2-3 hours after meals; food helps; blood in stools

37

DUMPING SYNDROME:
-when the stomach empties too quickly and the client experiences many uncomfortable to severe side effects… usually secondary to gastric bypass, gastrectomy, or gall bladder disease.

Rapid gastric emptying (and the food is not digested yet)

- rapid bolus of hypertonic food from the stomach to the small intestines → draws extracellular fluid into the lumen of the intestines to dilute the high concentrations of electrolytes and sugars

S/S:
-fullness
-weakness
-palpitations
-cramping
-faintness
-diarrhea

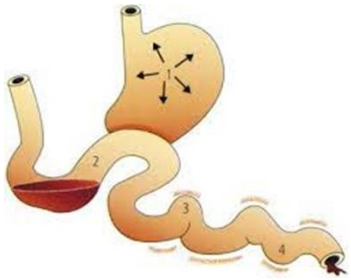
TREATMENT

-semi-recumbent with meals

-no fluids with meals (drink in-between meals)

-lie down after meals

-decrease carbs (carbs empty fast)



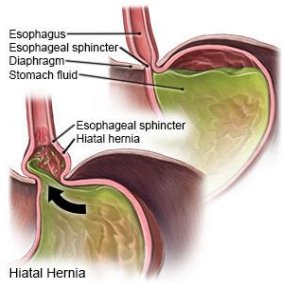
38

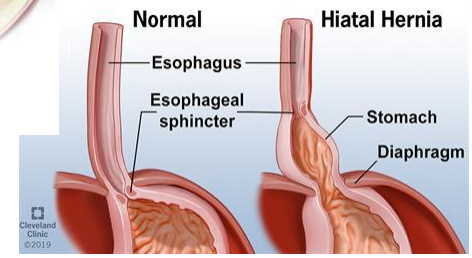
Hiatal Hernia:

-when the hole in the diaphragm is too large and the stomach moves up into the thoracic cavity.

-Other causes of hiatal hernia: congenital abnormalities, trauma, and surgery

S/S:
-heartburn
-regurgitation
-fullness after eating -dysphagia
Tx:
-small frequent meals
-sit up 1 hour after eating
-elevate head of bead
-surgery





39

Hyperalimentation (total parenteral nutrition) (TPN):

- Nursing Considerations:

-Keep refrigerated; warm for administration; let sit out for a few minutes prior to hanging
-Central line needed
-Filter needed
-Nothing else should go through this line (dedicated line)
Once a port has been selected to infuse the TPN, it should not be changed to another port due to the increased risk of infection.
-Discontinued gradually

Any change in the rate of the TPN should be done gradually… whether you are starting it, stopping it, or just trying to get to the goal rate → to prevent hyperglycemia (if you are starting it or increasing the rate) or hypoglycemia (if you are discontinuing it or decreasing the rate)

-Daily weights
-Check urine
-Do not mix ahead - mixture changes everyday according to electrolytes
-Can only be hung for 24 hours
-Change tubing with each new bag
-IV bag may be covered with dark bag to prevent chemical breakdown
-Needs to be on a pump
-Home TPN-emphasize hand washing

Complications:

- Dehydration and electrolyte Imbalances
- Thrombosis
- Hyperglycemia
- Hypoglycemia
- Infection
- Liver Failure
- Micronutrient deficiencies (vitamin and minerals)

40

-PPN (peripheral parenteral nutrition)

→ is used when additional nutritional support is needed for a short time, the protein and caloric intake is not adequate, or if the risk is too high to put in a central line. The client may also not be a candidate for tube feeding (enteral feeding).

→ The solution is administered through a peripheral IV.

→ PPN is hypertonic (like TPN) but the solution is infused in smaller volumes and the solution is only 20% glucose (TPN is usually 20% to 50% glucose)

PPN can be safely administered via a large peripheral vein. However, phlebitis and volume overload are complications that could occur.

-Assisting the MD insert a central line:

-Have saline available for flush; do not start fluids until positive confirmation of placement

-Position?

-If air gets in the line what position do you put the client in?

-When you are changing the tubing, how can you avoid getting air in the line?

-Clamp it off

-Valsalva

-Take a deep breath and HUMMMMMM

-Why is an x-ray done post-insertion?

41

*<u>Push/Pause</u>: When administering meds via central line this is the technique that should be used with flush

*The smallest syringe you should use with a central line is l0ml; anything less than this would exert too much pressure →could lead to catheter damage.

*Push pause method is used to prevent clot formation.

*To create turbulent flow inside the catheter and prevent clot formation

42

A nurse is assisting a physician inserting a central line, for a client diagnosed with sepsis. After inserting the central line, the doctor orders the nurse to hang a stat antibiotic prior to confirmation of the placement of the central line. Which of the following options would be most appropriate?

1. Start the ordered antibiotics.
2. Allow the physician to start the antibiotics as ordered.
3. Check for blood return and if present start the antibiotics ordered.
4. Administer the stat antibiotics after you have confirmation of placement of the central line.

43