

Diarrhea

Thursday, December 4, 2014
9:15 PM

Learning Objectives:

- causes, exclusions, dietary/lifestyle modifications
- MOA, onset, side effects, administration of pharm tx

DIARRHEA - increase in stool frequency, liquidity, weight: >3 BM/day

Acute	Persistent (EXCLUSION FOR SELF-TX)	Chronic (EXCLUSION FOR SELF-TX)
<14 days	2-4 wks	>4 wks

Osmotic	Secretory	Inflammatory	Motor
unabsorbed solutes ↓ H ₂ O reabsorption	↑ H ₂ O & Electrolyte (Cl-) secretion	↓ H ₂ O reabsorption, ↑ mucus/blood/pus secretion	↑ transit rate
- virus - <i>E. coli</i> - lactose intolerance - Mg drugs	- virus - <i>E. coli</i> - <i>Salmonella</i> - <i>Shigella</i> - ileal resection	- IBS - <i>E. coli</i> - <i>Salmonella</i> - <i>Shigella</i>	- IBS

Causes

- virus (85%)
 - NOROVIRUS* (contaminated food/H₂O)
 - ROTAVIRUS (kids)
- bacteria
 - invade mucosa (*Salmonella*, *Shigella*, *Campylobacter*) (contaminated food)
 - enterotoxins (*E. coli*, *S. aureus*) (contaminated food)
 - *C. diff* (antibiotics)
- protozoan (EXCLUSION FOR SELF-TX)
 - *Giardia lamblia* (contaminated H₂O)
 - *Entamoeba histolytica* (contaminated H₂O)
- food:
 - allergy
 - fat/acid
 - fiber
 - lactose intolerance
- meds:
 - antibiotics (*C. diff*)
 - laxatives
 - Mg drugs
 - cholinergic drugs (metoclopramide)

Complications

- dehydration

	Minimal	Mild-Moderate	Severe (EXCLUSION FOR SELF-TX)
weight loss	<3%	3-9%	>9%
mental status	NORMAL	fatigue, irritable	apathetic, lethargic, unconscious
thirst	NORMAL	eager	unable to drink
HR	NORMAL	NORMAL-slight ↑ HR	↑ HR
BP	NORMAL	orthostatic ↓ BP	↓ BP
mucous membranes	NORMAL	dry	perched
turgor	NORMAL	recoil <2 sec	recoil >2 sec
hands/feet	warm	cool	cold
urine	NORMAL-slight ↓	↓	unable to pee

Exclusions for Self-Tx

- <6 months old
- severe dehydration/abdominal pain
- fever
- blood/mucus/pus
- protracted vomiting
- risk for complications:
 - DM
 - severe CVD
 - CKD
 - immunosuppressed (chemo, transplant, AIDS)
- pregnancy
- chronic diarrhea

Treatment

NonPharm:

- H₂O/electrolytes (ORS=carbs+electrolytes)*
- REPLACEMENT: (75-90 mEq)

Kids	(30-100mL/kg)/3-4hrs
Adults	(2-4L)/3hrs
- MAINTENANCE: (40-60 mEq)
- diet (can stop food for 24hrs)

Pharm: (48 hrs)

Treatment Goals

- correct fluid/electrolytes
- relieve symptoms
- treat cause
- prevent complications

		MOA	Dosing	Max	Side Effects	Contraindications	Notes
1	loperamide (Imodium)	opioid agonist ↓ mobility, secretions	4mg, 2mg	8mg/day		< 6 yrs old	NOT w/ <i>C. diff</i>
2	bismuth (Pepto)	reacts with HCl & forms: - bismuth oxychloride = antimicrobial - salicylic acid = antisecretory			dark tongue/stool	- < 12 yrs old (Revel's) - ASA allergy - pregnancy	
3	lactase (Lactaid)	lactase metabolism					
4. DIETARY SUPPLEMENT	probiotics VSL#3 - <i>Bifidus regularis</i> (Activia) - <i>Bifidobacterium</i> (Align) (VSL#3) - <i>Streptococci</i> (VSL#3) - <i>Lactobacillus</i> (VSL#3)		wide range (CFU)		gas, abdominal pain		