

FAFP1 Pharmaceutical care I

Lecture:

Pharmaceutical care in patients with
gastrointestinal diseases
– constipation and diarrhoea

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Learning outcomes

Pharmaceutical care in patients with:

- Constipation
- Diarrhea

Constipation



Signs and symptoms of constipation

- **change from the normal body habits**
- **infrequent or difficult evacuation of faeces**
- **hardening of stools**
- **abdominal pain**
- **abdominal discomfort**
- **incomplete emptying of the bowel**
- **children - irritable and lose their appetite**

Causes of constipation

Simple (functional) constipation (with no underlying pathology)

- **reduced mobility**
- **insufficient fluid or fibre in the diet**
- can usually be corrected with dietary or lifestyle measures or short-term use of laxatives

Organic constipation (results from anatomical causes)

- narrowing in the intestinal tumors
- Bowel strangulation

Secondary constipation (caused by underlying pathological causes)

- **neurological diseases**
- **psychiatric disorders**
- **side-effect of some drugs**

Causes of constipation

Constipation as a separate disease

- **addictive constipation**
 - caused by suppression of natural defecation reflex from social, psychological or health reasons
- **inert colon** (lazy bowel syndrome)
 - changes in autonomic nerve system, long-term use of anthraquinones
- **failure emptying mechanics**
 - the pelvic floor disorders, extinction rectoanal inhibitory reflex, ...
- **anorectal dysfunction**

Medicine-caused constipation

- drugs with **antimuskarinic action**:
 - older antidepressant drugs - **amitriptyline, imipramine**
 - antiparkinsonian drugs - **orphenadrine, procyclidine**
 - antipsychotic drugs - **chlorpromazine, other phenothiazines**
- opiates - **codeine, dihydrocodeine, morphine, ...**
- **NSAIDs**
- **antihistamines**
- **verapamil**
- **iron**
- **some diuretics**
- **laxatives**
- **aluminium-containing antacids**
- **muscle relaxants**

Pharmaceutical Care in Constipation

Questions to be asked:

- How long do the difficulties take?
- How often do you go on the throne?
- Physical activity
- Fluid and nutritional balance
- Use of drugs
- Other diseases?
- What were any attempts of self-medication?



Pharmaceutical Care in Constipation

Treatment possibilities:

1. Dietary regime
2. Hydration
3. Physical activity
4. Training of the defecation reflex
5. Laxatives

1. Dietary Regime - Constipation

- ❖ **whole grain**
- ❖ **vegetables** and **fruits**, or add **fibre**
 - ❖ **psyllium**
 - ❖ **high-fibre diet**
- ❖ After treatment with antibiotics add:
 - ❖ **B vitamins**
 - ❖ **fermented dairy products**
 - ❖ **prebiotics** (oligosacharides, prebiotic fibre)
 - ❖ **probiotics** (live probiotic cultures - lactobacillus, bifidobacterium)
- ❖ Regular meals **rhythmicity**

2. Hydration - Constipation

- ❖ **High fluid intake**

 - ❖ 2-3 liters / day

 - ❖ Hot drinks

- ❖ **Old people do not feel thirsty**

- ❖ **When using diuretics**

3. Physical activity - Constipation

- ❖ Regular exercise

- ❖ Reduce stress

4. Training of the defecation reflex - Constipation

- ❖ „**bowel habit**“

- ❖ **Ideally, in the morning after waking up**

- ❖ the best time for bowel motion is usually **the first hour after breakfast**,
when gastrocolic reflex is activated

- ❖ at this time the **laxatives should perform** if used properly

5. Laxatives

1. STIMULANT LAXATIVES

- natural anthraquinone derivatives
- bisacodyl
- sodium picosulfate

2. OSMOTIC LAXATIVES

- lactulose
- glycerolum
- macrogols

3. SALINIC LAXATIVES

- magnesium salt

4. BULK-FORMING LAXATIVES

- ispaghula husk, psyllium
- fibre

5. EMOLIENT LAXATIVES

- paraffin oil

Laxatives in therapy of acute constipation

1. step: Glycerine suppositories
2. step: Osmotic laxatives (lactulose, glycerolum)
3. step: Stimulant laxative (senna anthraquinone, bisacodyl, picosulfate)
4. step: Bulk-forming laxative (psyllium, fibre)
5. step: Homeopathic preparations

Laxatives in therapy of chronic constipation

1. step: Bulk-forming laxative (psyllium, fibre)
2. step: Constant enough liquids
3. step: Examination of physician - referral of medical investigation

Laxatives taken before examinations

Macrogol (Fortrans[®])

- dissolve in 1 liter of water and drink the evening before
- eat least 4 hours before exercise

Magnesium sulfate

- magistral preparation, use in similar way

Sorbitol, sodium docusatum (Yal rct. sol.®)

- **osmotically, detergency, softening**
- indications:
 - before colon, kidney, urinary and genital tract examination
 - pregnancy women before childbirth
 - before colon surgery, ...

1. *Before using the bottle shake vigorously until foaming*
2. *Remove the cap and tube enema application introduce into rectum*
3. *Press the plastic bottle to apply the contents with force*



Diarrhoea



Signs and symptoms of diarrhoea

- passing of **increased amounts of loose stools**
 - **more than 300g in 24 hours** in adults
- Acute diarrhoea:
 - rapid onset, watery stools, passed frequently,
 - resolves spontaneously within 72 hours
- Traveller's diarrhoea:
 - early onset, usually within first 3 days of trip

Causes of diarrhoea

Acute diarrhea (infective diarrhoea, gastroenteritis)

- acute diarrhoea lasts a maximum of 14 days
- caused by:
 - **alimentary intolerance**
 - **infections (bacterial, viral, parasital)**
 - **by medication**
 - **psychological nature**

Causes of diarrhoea

Traveller's diarrhea

- caused by:
 - **infections (bacterial, viral)**
 - **Escherichia coli, Shigella species, Salmonella species, Campylobacter jejuni, Giardia lamblia**
 - tropical and subtropical areas
- some infections may cause **persistent diarrhoea** or **systemic complications**
- up to 15 % of patients have **dysentery**
- lasting up to 4 – 7 days

Causes of diarrhoea

Chronic diarrhea

- recurrent or persistent
- requires medical investigation
- caused by:
 - **irritable-bowel syndrome (IBS)**
 - **inflammatory bowel disease**
 - **malabsorption syndromes**
 - **bowel tumor**
 - **metabolic disease**
 - **side effect of drugs**
 - **laxative abuse**

Medicine-caused diarrhoea

- **Antibiotics (ampicillin, amoxicillin, sulfonamides)**
- **Antihypertensives (methyldopa, digoxin)**
- **Some artificial sweeteners**
- **Drugs containing magnesium – magnesium-containing antacids**
- **Levothyroxine**
- **Cytostatics**
- **Antidepressants: SSRIs, NSRI**
- **Antidiabetics**
- **Hypolipidemics (obesity - orlistat)**
- **...**

Pharmaceutical Care in Diarrhoea

Symptoms for referral:

When the patient should be seen by the doctor?

- watery diarrhoea **lasts for longer** than 3 days
- **fever** lasting longer than 1 day
- admixture of **blood** or **mucus** in the faeces
- **abdominal pain** that lasts in time between the cramps
- **repeated vomiting** accompanying diarrhoea
- **weight loss of 5%**
- **serious disease**
- **adverse drug reaction**
- **dehydration in babies**

Pharmaceutical Care in Diarrhoea

Questions to be asked:

- Have you been travelling?
- The diet in the last 24 or up to 48 hours?
- You have blood or mucus in the faeces?
- Has anyone in your neighborhood/family similar problems?
- Do you have any other symptoms - nausea, vomiting, fever?
- Use of drugs?
- Diseases?
- Does the patient have signs of dehydration, thirst?



Therapy of acute diarrhoea

- acute diarrhoea - without serious symptoms, or known cause
1. Symptomatic therapy, resp. therapy of accompanying symptoms
(antipyretics)
 2. Oral rehydration therapy
 3. Diet

1. Symptomatic therapy of acute diarrhoea

Carbo activatus

Diosmectin

Saccharomyces Boulardi

Loperamide

Racecadotril

2. Oral rehydration therapy

- first line of treatment of acute diarrhoea is:
 - **fluid**
 - **electrolyte replacement by oral rehydration therapy (ORT)**
- ORC can be recommended to **patients of any age**
- ORT contain:
 - sodium – Na
 - potassium – K
 - citrate / bicarbonate
 - glucose

2. Oral rehydration therapy

Magistraliter preparations:

Natrii chlorati	3,5	
Natrii hydrogenkarbonici	2,5	
Kalii chlorati	1,5	
Glucosi		
20,0		
Aqua		ad 1000,0

1 teaspoon of salt
8 teaspoons of sugar
Juice of oranges, grapefruit
Up to 1 liter of water

- adults: 250 to 500 ml per hour
- children: less adequately

Food supplements:

ORC sol, Enhydrol sachet, HiPP ORS 200, ...

3. Diet

- drink plenty of clear fluids, or diluted fruit squash
- avoid drinks high in sugar
- avoid milk a milky drinks
- light eating, easily digestive food
- babies should continue in brestfeeding!

3. Diet

- traveller's diarrhoea:
 - wash the hands before eating
 - avoid local drinking water, drink only bottled water
 - avoid ice cubes, dairy products, ice creams, home-distilled drinks
 - eat only heat-treated food
 - avoid unpeeled fruit and vegetables

Generally follow the dictum:

cook it, boil it, peel it – or leave it

Therapy of infectious diarrhoea

Diagnosis of infectious diarrhoea:

What are the symptoms?

1. The presence of fever
2. Vomiting
3. Crampy pain (possible appendicitis!)
4. Epidemiological factors - traveling, stay in a group
5. Thirst and exhaustion



- **intestinal disinfectants**
- contact your doctor

Therapy of infectious diarrhoea - intestinal disinfectants

- indication for intestinal disinfectants:
 - acute diarrhoea with **bacterial** origin

Chloroxin

Nifuroxazidum

Rifaximin

Therapy of infectious diarrhoea

- adequate **rehydration** + **supply of minerals**
- **diet** - rice, bananas, apple pulp, biscuits
- not longer than 1 day without food!
- strict **contraindications to opioid constipating agents**
- **fever**

Therapy of chronic diarrhoea

- causal therapy

1. Pharmacotherapy

Loperamide

Codeine

Diphenoxylat

Tinctura opii

Probiotics

2. Rehydration

Therapy of all types of diarrhoea - probiotics

- to be classified as a probiotic product must meet the following criteria:
 - I. **benefits are measurable and clinically documentable**
 - II. **microbiological characteristics**
 - III. **stable during storage**
- the minimum daily dose probiotic preparation to achieve a therapeutic effect
 - ranges from **$10^8 - 10^{10}$ CFU**

Prebiotics

- prebiotics are **indigestible food components** that **selectively promote the growth and function of the intestinal microflora**
- the most important representatives:
 - **oligosaccharides**
 - **galacto-oligosaccharides**
 - **fructooligosaccharides (inulin)**

Probiotics

- probiotics are **live probiotic cultures**

- the most important representatives:
 - **Lactobacillus**
 - **Bifidobacterium**
 - **Saccharomyces boulardii**

Probiotics

- use **along with antibiotics**
- keep a **sufficiently effective dose**
- treatment with probiotics for **acute diarrhea** leads to a shortening of the difficulties of one to two days
- recommended as the prevention of **traveler's diarrhea**

Synbiotics

- products that contain both probiotics and prebiotics