

# Gastrointestinal tract in elderly patients

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**WHAT CHANGES AFFECT IN GI TRACT IN  
ELDERLY PATIENTS....**

# Mouth

- **Teeth**
  - Tooth loss, caries, periodontosis
  - Change colour – yellow
  - Become worn – enamel does not regenerate
  - Decreased vascularity and sensitivity of dentine and pulp
- **Mouth**
  - Mucosa is thinner and more friable
  - Decreased activity of salivary gland - xerostomia
  - Decreased function of taste

# Oropharynx

- **Swallowing disorders**

- common problem especially in patients with .....
- abnormal transfer of a food bolus from the oral cavity to the pharynx is in up to 60% of elderly patients
- Etiology:
  - anatomic changes in oesophageal neuromuscular anatomy
  - upper esophageal sphincter pressure decreases with age
- → ALL THESE ATTRIBUTES LEADS TO HIGHER RISC OF DYSPHAGIA AND ASPIRATION

# Esophagus

- **Typical changes in elderly patients:**
  - Decrease of number of myenteric neurons, thickness of esophageal smooth muscle layer, impaired relaxation or decreased contractions of the lower esophageal sphincter (LES) and others....
  - Related to peristalsis and swallowing
- **Complaints of dysphagia, regurgitation and heartburn**
  - fairly common problems with a prevalence of 35% reported in the general population aged 50 to 79 years
  - CAVE - might have a serious underlying etiology (malignancy) in higher incidence than younger patients
- **Typical diseases in this location:**
  - GERD, motility disorders

# Stomach

- **Typical changes in elderly patients:**
  - Decreased clearance of the stomach (prolong contact of drugs,...), decreased perception of gastric distension, acid hyposecretion, increased risk of gastric mucosal injury (reduction in gastric mucosal cytoprotective factors such as mucosal prostaglandins, decrease in gastric bicarbonate, thinning of the mucus gel layer, decrease of ability to regenerate), decrease in basal gastric blood flow, decreased secretion of intrinsic factor, increased H. pylori carriage and others...
- **Typical diseases in this location:**
  - Peptic ulcer, tumors

# Small bowel

- **Typical changes in elderly patients:**
  - decreased absorption of vitamins (vit B12, folic acid,...) + minerals (calcium, iron, copper, zinc) + fatty acids, decreased small bowel motility, increased incidence of bacterial overgrowth
- large functional reserve capacity, because of the substantial mucosal surface area available for secretion and absorption
- Severe disorders such as chronic intestinal diseases (IBD) or extensive surgical resection can cause malfunctions of small bowel in elderly patients

# Colon

- **Typical changes in elderly patients:**
  - Including alterations in mucosal cell growth and differentiation, metabolism and immunity, reduction of neurons and others
- **Typical diseases in this location:**
  - Fecal incontinence, constipation, colon cancer, diverticulosis



# Liver

- **Typical changes in elderly patients:**
  - Decrease of blood flow and perfusion of the liver (30 %), decrease of hepatic mass, compromised hepatic regeneration, decrease of synthetic function and detoxication
- Ageing – NO significant effect on conventional liver function tests
- senescent liver maybe more susceptible to stress insult from diet, alcohol consumption, tobacco use, nutritional status, coexistent diseases, and genetic factors

# Biliary system

- **Typical changes in elderly patients:**
  - Increase prevalence cholelithiasis, impaired gallbladder function (postprandial gallbladder volumes, impaired gallbladder contractility)
- **Typical diseases in this location:**
  - Cholelithiasis and related complications

# Pancreas

- **Typical changes in elderly patients:**
  - decreased pancreatic weight, ductal epithelial hyperplasia, interlobular fibrosis, modest decrease in bicarbonate and enzyme output
- Exocrine function – adequate reserve to maintain normal digestive capacity in elderly patients - if NO pathology of pancreas is present !!!
- **Typical diseases in this location:**
  - carcinoma, biliary pancreatitis

# Gastrointestinal immunity

- **GI tract is the largest immunological system in mammals**
  - uptake and presentation of antigen at the mucosal surface, differentiation and migration of immunologically competent lymphocytes to the lamina propria; regulation of local antibody production in the intestinal wall
- Elderly people are relatively susceptible to infections that enter the body via the GI tract - **aging impair mucosal immunity**

# GI tract drug metabolism

- **Increased risk for drug interactions and adverse drug reactions**
  - large number of drugs prescribed in this age group
- **Influence to motility**

**MOST COMMON GI DISEASES IN ELDERLY  
PATIENTS....**

# Cholelithiasis

- **Risc factors:** age, female, obesity, dyslipidemia, weight loss, medications
  - **Age is the major factor** (increase every year of life)
- **Symptomatology:**
  - asymptomatic in most cases, elevation of liver tests, biliary colic, cholangitis, biliary pancreatitis

# Cholelithiasis

- 80% of stones consist of cholesterol x 10-20% pigment stone
- **Diagnosis:** ultrasound, MRCP, ERCP, CT, PTC
- **Treatment:** related to etiology
  - cholecystectomy x ERCP x antibiotics + fluids + analgetics



# Acute cholecystitis

- 50-70% of cases occur in the geriatric age
- **Clinical manifestations** – severe and continuous pain in upper right quadrant or epigastrium after fatty meal, fever, nausea and vomiting, Murphy's sign
- **CAVE – elderly patients – atypical presentation** (only pain) and higher risk of complications
- **Pathophysiology**
  - Prolonged obstruction of the cystic duct by gallstones → inflammation of gallbladder
  - Acalculous cholecystitis – inflammation of the gallbladder in the absence of gallstones (idiopathic,...)
  - Chronic cholecystitis – recurrent episodes of cystic duct obstruction → chronic inflammation of gallbladder → gallbladder dysfunction

# Choledocholithiasis

- Can lead to jaundice, cholangitis (Charcot's triad), pancreatitis
- Prevalence of bile duct stones increases with age
- Cholangiogenic sepsis – bad prognosis in elderly patients

# Tumors of subhepatal region

- **Gallbladder cancer** – late diagnosis, poor symptomatology, more females, more often in elderly patients
- **Bile duct cancer** – more common in elderly patients, presented by signs of biliary obstruction, more males

# Gastroesophageal reflux disease (GERD)

- **Caused by reflux of gastric content into the esophagus**
- **Different kind of manifestation** (mild episodes of heartburn without esophagitis x chronic inflammation with erosive esophagitis or ulcerations)
- **Increase with aging** – age is one of the main risk factors
- **Pathophysiology**
  - impaired motility of the esophagus, hiatus hernia, reduced LES pressure and length, delayed gastric emptying transit time, decreased tissue resistance as a result of impaired epithelial cell regeneration, duodenogastroesophageal reflux of bile salts, drugs (ASA, NSAIDs, corticoids, BZD,...)
  - HIGHER PREVALENCE OF THESE PROBLEMS IN ELDERLY PATIENTS

# Gastroesophageal reflux disease (GERD)

- **Symptomatology**

- significantly lower prevalence of typical (heartburn, acid regurgitation, and epigastric pain) and also atypical symptoms (ORL and pulmonary symptoms such as cough, bronchial asthma, hoarseness,..)
- NONSPECIFIC SYMPTOMS - vomiting, anorexia, weight loss, anemia

- **Diagnosis**

- Gastrosocopy, 24 hour pH testing, manometry

- **Treatment**

- Lifestyle and diet
- PPI and other drugs (H2 blocators, sucralfate,...)
- surgery

# Dysphagia

- **Difficulty in swallowing**
- **Only symptom**
- **Common in older age**
- **Causes:**
  - Structural: cancer, strictures, esophagitis, , external obstruction, foreign bodies
  - Functional: dysmotility, neurological causes
- **Diagnoses:**
  - Gastroscopy, X-ray swallowing act, ...
- **Treatment:**
  - PPI, nutritional support, antiemetics,

# Peptic ulcer disease

- Break of the mucosa lining the stomach or the duodenum
- Localised from the esophagus to the duodenal bulb
- **HIGH INCIDENCE OF PEPTIC ULCER IN ELDERLY PATIENTS**
  - High risk of complications
  - High risk of mortality
- **Risk factors in elderly patients**
  - H.pylori, NSAIDs, stress, reduction of gastric mucosal barrier, high levels of gastric acid,

# Peptic ulcer disease

- **Symptomatology**
  - Difficult to diagnose – atypical symptoms
  - Abdominal pain generally, nausea, anorexia, dysphagia, anemia.....
    - x
  - Bleeding, perforation



# Peptic ulcer disease

- **Diagnosis**
  - Endoscopy (H.pylori biopsy), X-ray,..
- **Treatment**
  - Eradication of H. pylori, reduction of usage NSAIDs, PPI, urgent endoscopy

# Diverticular disease

- **Herniation of colonic mucosa through the smooth muscle layers of the colon**
- **2/3 patients have diverticulosis by age 80**
- **Pathophysiology**
  - Altered colonic motility resulting in increased luminal pressure, low intake of fiber resulting in increased luminal pressure, decrease structural integrity of colon

# Diverticular disease

- **Symptomatology**
  - Asymptomatic x diverticulitis  
(pain,...) x bleeding x  
perforation
- **Treatment**
  - Bowel rest, antibiotics,  
surgery

# Clostridium difficile colitis

- **Pathogenesis**
  - Exposition to antibiotics → altered colonic microflora + immunodeficiency → colitis
- **Symptomatology**
  - pseudomembranous colitis - diarrhea, pain, fever,...
- **Diagnosis**
  - Laboratory- cultivation, detection of toxin
  - Colonoscopy
- **Treatment**
  - Antibiotics, fecal transplantation

# Ischemic colitis

- **The most common intestinal vascular disorder in the elderly**
- **Pathophysiology**
  - Inadequate blood supply – most common cause is atherosclerosis
- **Symptomatology**
  - Abdominal pain (worsen after food), bloody diarrhea
- **Diagnosis**
  - Colonoscopy, angiography
- **Treatment**
  - Stabilization, bowel rest, antibiotics

# Constipation

- **Defined as:** straining at stool, hard stool, feeling of incomplete evacuation of stool, two or less stools per week
- **Prevalence increase markedly in people older than 60 years**
  - 30 % of patients
- **Risc factors:**
  - Medication (opiates, NSAIDs, iron,...), impaired mobility, neurological disorders (Parkinsons disease), dehydration, low dietary fiber, DM, mechanical obstruction (tumors)
- **Treatment**
  - Education (gastrocolic reflex, diet, more fluids, movement,...)
  - Laxatives – glycerine, senna, psyllium, lactulose,...

# GI bleeding

- **About 35-45% in elderly (60 years and older)**
- **LIFE THREATENING**
- **Upper GI bleeding (oesophagus-duodenum)**
  - Haematemesis, melena
  - Main causes: ulcers (35%), oesophagitis (15%), erosions (15%), M-Wsy, varices, tumors,...
- **Lower GI bleeding (duodenum-anus)**
  - Acute x chronic
  - Hematochezia
  - Main causes: diverticulum (30%), colitis (20%), angiodysplasia (15%), tumors,...

# Tumors

**More than 50 % of patients with a GI tract tumour are over 70 years of age**

**Increase incidence of malignancies**

- Esophagus
- Stomach
- Colon
- Pancreas
- Gallbladder and biliary system
- .....



# Nutrition

- **Normal ageing**
  - Reduced calories requirements (lower basal metabolic rate, reduced activity)
  - Reduced appetite
  - Lower reserves of macro and micronutrients
- **Older patients quickly become malnourished in the presence of disease**

# Nutrition

- **Nutritional support**
  - The key is to identify malnutrition
  - Cause is usually multifactorial – diseases, social, psychological, age related
  - Food preferences (proteins,..) and high calorie foods
  - Dietary supplements
  - Enteral feeding possibilities

# Generally....

- Every part of gastrointestinal system in elderly patient has greater or lesser changed function in comparison of young people.....
- In elderly patients we can see more frequent some diseases....
- Priority is to exclude organicity of symptoms in elderly patients....

**THANK YOU FOR YOUR ATTENTION...**