How to Advise Patients in GI OPD

Common Problems in GI OPD

- GERD
- Dyspepsia, PUD, HP and NSAIDs
- Asymptomatic gallstone
- Chronic constipation
- IBS
- Chronic hepatitis B and C
- Cirrhosis and portal HT
- NAFLD

Patient Advice: Contents

- Natural history and prognosis
- Key investigations
  - Indications and risks
  - Red flag signs
- Medications
  - How they work
  - Efficacy and duration
  - Possible side effects
- Non-pharmacologic therapy and lifestyle modifications
- Questions and answers

GERD

GERD: Disease Overview

- **Cause:** dysfunction of LES → reflux of stomach content causes troublesome symptoms and/or complications
- **Risk factors:** hiatal hernia, obesity, pregnancy, etc.
- Not life threatening, but symptoms can affect QOL
- Prognosis: NERD/mild GERD (>85% of Thai pt.) – good, occasionally relapse; Severe GERD – often relapse without PPI, complications may occur
- Risk for CA: very low (Barrett’s <1% in Asia)

Symptoms Suggestive of GERD

- **Alarm symptoms:**
  - Dysphagia
  - Odynophagia
  - Frequent vomiting
- **Drug review:**
  - Double dose or Switch PPI
  - 4-8 wk
- **ESD:**
  - Not improve
  - Symptoms free
  - Not response
- **Step down/Stop:**
  - Double dose of Switch PPI
  - 4-8 wk
- **Step up:**
  - Double dose
  - 8 wk
- **Step up/Step down:**
  - Double dose of Switch PPI
  - 4-8 wk
- **On-demand:**
  - Switch PPI
  - 4-8 wk
- **Continuous:**
  - Double dose of Switch PPI
  - >12 wk

Adapted from Thailand GERD Guideline
GERD: Lifestyle Modification

• Weight reduction – for pt. with overweight or recent weight gain
• Stop smoking
• Avoid NSAIDs
• Try not wearing tight clothing and body shapers
• Eat smaller portions of food; don’t eat too much
• Avoidance of meals 2-3 hour before bedtime recommended if nocturnal GERD
• Head of bed elevation (4-6”) if nocturnal GERD
• Routine global elimination of food that can trigger GERD not recommended – selective elimination could be considered

GERD Common Trigger Foods

- ชา/กาแฟ
- Alcohol
- อาหารมัน
- น้ำแอ๊ดลม
- Chocolate
- กระเทียม
- หัวหอม
- มะเขือเทศ
- ผลไม้รสเปรี้ยว
- Peppermint
- อาหารรสเผ็ด
- เนย/ชีส

Sleep Positions and GERD

Definition: gastric acid recovery to a pH level <4 for at least 60 consecutive minutes in the night period

GERD: Medications and Sx

• PPI – main drug for GERD
  – Should be taken 15-45 min before meal
  – Duration: 4-8 wk – then PRN (maintenance >6-12 mo for severe GERD/LPR)
  – Side effects – non-specific (rare)
• Other meds: antacids, alginates, prokinetics, H2RA
• Laparoscopic fundoplication
  – Indications: PPI-responsive GERD who don’t want to take long-term PPI (efficacy ~ PPI) and refractory GERD with large hiatal hernia
  – Complications: <1% mortality, 25% dysphagia, bloating, 30-60% need rescue PPI after 2-5 yr

Potential Risks of Long-term PPI

- Chronic acid suppressive state
  - ↓ Absorption of calcium (osteopenia), iron and vitamin B12
  - ↑ Risk of infections: CDAD, enteric infections, pneumonia and SBP
- Drug-drug interactions
  - Altered metabolism by CYP450 (3A4, 2C19) eg. clopidogrel
  - Altered absorption due to gastric pH eg. digoxin
  - Other/unclear mechanisms
- Trophic effects due to hypergastrinemia
  - Formation of fundic gland polyps
  - ↑ Progression of atrophic gastritis
  - Carcinoid tumors have been reported in animals
- Other/unclear mechanisms
  - ↑ Chronic kidney disease
  - ↑ Dementia
  - ↑ Myocardial infarction
  - ↑ Ischemic stroke
  - ↑ All-cause mortality

Dyspepsia and H. pylori
**H. Pylori: Disease Overview**

- One of the most common cause of peptic ulcer, gastritis, dyspepsia and CA stomach
- If not eradicated: dyspepsia or ulcer recurrence 60-90% within 1 yr
- Transmission: fecal-oral, human-to-human
- Prevalence: in Thai adults
  - Asymptomatic: ~30%
  - NUD/uninvestigated dyspepsia: 30-50%
  - PUD: 70-80%

**Thai Guideline for Dyspepsia 2018**

**Uninvestigated dyspepsia**
- (exclude medications and other organic diseases)
- Age onset of dyspepsia ≥50 yr or alarm symptoms* at any age

**Specific treatment**
- EGD with HP test
- Trial of PPI +/- prokinetics 4-8 wk
- No
- Specific treatment
- Functional dyspepsia
  - (trial of PPI, prokinetics, TCAs and/or cytoprotective agents)
  - Refer to specialist for further investigation and treatment

**Alarm symptoms:** dysphagia, evidence of GI blood loss, unexplained weight loss, persistent vomiting

**Urea Breath Test (UBT)**

- Non-invasive diagnosis and post-Rx follow-up
- A very small risk of allergic reactions
- High sensitivity (90%) and specificity (95-100%)
- Preparation: NPO 4 hr; stop PPI (≥2 wk), antibiotics and bismuth (≥4 wk) before testing

**H. pylori Eradication Regimens**

**1st line therapy**
- Standard triple therapy
  - PPI BID + Amox 1 g BID + Clarithro 500 mg BID × 10-14 D
  - Eradication rate: ~80%

**Concomitant therapy**
- PPI BID + Amox 1 g BID + Clarithro 500 mg BID + Metro 400 mg TID × 10 D

**Sequential therapy**
- PPI BID + Amox 1 g BID × 5 D, then
  - PPI BID + Metro 400 mg BID + Clarithro 500 mg BID × 5 D

**Quadruple therapy**
- PPI BID + Bismuth 525 mg BID + Metro 400 mg BID/TID
  - Clarithro 500 mg BID or Tetra 500 mg QID × 14 D

**Levofloxacin-based triple therapy**
- PPI BID + Amox 1 g BID + Levofox 500 mg OD × 14 D

**2nd line therapy**
- 14-Day quadruple therapy
- 14-Day levofloxacin-based triple therapy

**Susceptibility testing (E-test or molecular test): not to use resistant antibiotics**

**H. Pylori: General Advice**

**About the treatment**
- Emphasize the importance of compliance (e.g. adequate duration 10-14 d, PPI timing)
- Emphasize consequences of non-adherence
- Ask about the history of drug allergy (e.g. antibiotics, ASA, salicylates) and previous use of antibiotics (e.g. clarithromycin, levofloxacin)
- Anticipate treatment-related side effects e.g. N-V, metallic taste, diarrhea, GI upset and black stool
- Successful treatment reduces symptoms, reduces ulcer recurrence, reduces gastritis progression and the reduces CA

*Metronidazole-based triple therapy is less effective*
**H. Pylori: General Advice**

**Prevention**
- Quite difficult to prevent
  - Average re-infection rate in Thailand ~3% per year; may be more if family members are HP+
    (test and treat family members with dyspeptic symptoms?)
- Eat clean/cooked food; drink clean water
- Use middle spoon
- Wash your hands after you use the toilet and before you prepare or eat food

**Dyspepsia: Lifestyle Modification**
- Stop smoking (or don’t smoke)
- If possible, avoid taking ASA or NSAIDs
- Avoid alcohol, caffeine and carbonated drinks
- Avoid eating too spicy or any food that aggravate your symptoms
- Eat small, low-fat meals during the day
- Eat at slow pace; chew food with care and fully
- Allow enough time for meals
- Don’t eat right before you go to bed or exercise
- Sleep with your head raised slightly
- Get enough rest

**Functional Dyspepsia: Medications**

<table>
<thead>
<tr>
<th>Predominant symptom(s)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epigastric pain/burning (EPS)</td>
</tr>
<tr>
<td>Postprandial fullness, early satiety, bloating, N-V or belching (PDS)</td>
</tr>
</tbody>
</table>

**Dyspepsia: Common Drugs**

**Domperidone**
- Helps your stomach move more properly
- Anti-emetic effects (PRN for N-V)
- Possible side effects:
  - QT prolong (esp. patients with age >60 yr and taking QT-prolonging drugs or CYP3A4 inh.)
  - Increased prolactin: galactorrhrea, gynecomastia

**Tricyclic antidepressants (low doses)**
- Helps reducing visceral hypersensitivity
- Possible beneficial effects on mood
- Possible side effects: dry mouth, somnolence, constipation, QT prolongation

**Peptic Ulcers and NSAIDs**

**PUD/NSAIDs: General Advice**

- NSAIDs and ASA reduce GI mucosal defense
  - 25% → dyspepsia
  - 15-30% → gastritis or PUD
  - 1-2% → ulcer complications yearly
  - Prior ulcer bleeding → 15-40% recur in 1 yr
- Taking NSAIDs only if necessary
  - At the lowest doses
  - Taken with foods (not guarantee protection)
- Avoid alcohol and smoking
- Check for H. pylori, if long-term NSAIDs is planned
- For pt. with risk factors: take PPI to prevent NSAID-induced dyspepsia and ulcer complications
**PUD and ASA/NSAIDs**

**Prevention of NSAID-induced ulcer complications**

<table>
<thead>
<tr>
<th>Low GI risk</th>
<th>Mod. GI risk</th>
<th>High GI risk</th>
</tr>
</thead>
</table>
| Low CV risk (the least ulcerogenic NSAID at the lowest effective dose) | NSAID alone | NSAID + PPI (COX-2 inh.) | Alternative Rx if possible

| High CV risk (ASA required) | Naproxen (or celecoxib*) + PPI | Naproxen (or celecoxib*) + PPI | Use alternative Rx if NSAID required; celecoxib + PPI |

GI risks: (1) age >65 yr; (2) high-dose NSAID; (3) history of uncomplicated PUD; (4) concurrent use of ASA, corticosteroids or anticoagulant

- Low GI risk: no risk factor
- Moderate GI risk: 1-2 risk factors
- High GI risk: history of complicated ulcer (especially recent) or ≥3 risk factors
- High CV risk: 10-yr risk of CV events ≥10% (low-dose ASA is recommended by AHA)

Adapted from ACG Practice Guideline 2009 (*recommendations from the International NSAID Consensus Group 2015*)

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**Asymptomatic Gallstone**

**Gallstone: Disease Overview**

- **Prevalence:** 5-20% of Thai adults
- **Risk factors:** female, obesity, older age

![Gallstone Diagram](image)

<table>
<thead>
<tr>
<th>Indications for LC in Asymptomatic GS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons</td>
</tr>
<tr>
<td>Living in or traveling to remote areas</td>
</tr>
<tr>
<td>Undergoing bariatric surgery for severe obesity</td>
</tr>
<tr>
<td>SOT candidates</td>
</tr>
<tr>
<td>GS size &gt;3 cm</td>
</tr>
<tr>
<td>Porcelain GB</td>
</tr>
<tr>
<td>American Indians</td>
</tr>
<tr>
<td>Young age</td>
</tr>
</tbody>
</table>

Unclear indications: DM, thalassemia, non-functioning GB, concomitant cholecystectomy during another abdominal surgery, certain occupations e.g. pilot

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**GS: Medications and Sx**

- **LSM:** wt. reduction, avoid fatty meals
- **Medications** – often not recommended
  - UDCA: thins the bile, may slowly dissolve small cholesterol stones (GS can recur after stop)
- **Laparoscopic cholecystectomy (LC)**
  - Minimally invasive Sx: often admit for 1-2 d, go back to normal activities within 1-2 wk
  - Complications (in good hands): bile duct injury 0.4-0.5% (5/1,000), mortality 0.15%
  - Long-term effects: no significant effects on bile pool and fat absorption (<10% of patients may complain of mild diarrhea and dyspepsia)

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**Chronic Constipation**
Diagnostic Flow: Chronic Constipation

**History and physical examination**

- Mild-moderate constipation → Empiric Rx with laxatives
- Severe constipation → Blood tests, TFT?

**Therapy of underlying condition(s)**

- Systemic disease
- Structural disease of the colon

**Colonoscopy / barium enema**

- Positive
- Negative

**Empiric Rx with laxatives**

**Blood tests, TFT?**

**Positive**

**Negative**

**Idiopathic constipation**

Constipation and IBS: Red Flag Features

- Recent onset of constipation in older age (>50 yr)
- Persistent pain
- Rectal bleeding
- Obstructive symptoms

- Weight loss
- Fever
- Family history of CRC
- Anemia
- Stool occult blood +
- Elevated CEA level

Colonoscopy: General Advice

- OPD procedure (~30 min), under IV sedation
- Requires bowel preparation

**Indications:**

- Suspicious for colonic disease
- CRC surveillance (e.g. age ≥50 yr, FHx of CRC)

**Complications:**

- Pain, bleeding, perforation
- Overall risk: 3-4/1,000
- 2-3% for polypectomy

**Alternatives:**

- Stool occult blood test
- DCBE or CT colonography

Constipation: General Advice

- Educate your patient that normal bowel function varies widely, from 3 BM/day to 3 BM/week
- Eat well-balanced diet with fresh fruits, veggies and a lot of water
- Set aside time to go to the toilet (preferably in the morning; may be after breakfast)
- Go to the toilet when you feel like you have to
- Don’t ignore the urge to have a bowel movement
- Don’t spend more time on the toilet than it takes to pass a stool (maximum 10 min)
- Exercise regularly
- Be patient; feeling better takes time and effort

High Fiber Diet

- ข้าวกล้อง
- ข้าวโอทิส
- ข้าวโพด
- ถั่วลันเตา
- กะหล่ำปลี
- สับปะรด
- อะโวคาโด
- แอปเปิ้ล
- บรัมเบอร์รี่
- บลัตเตอร์
- Artichoke
-berries

Adapted from American Gastroenterological Association, Gastroenterology Center
### Medications for Chronic Constipation

**Bulk (fiber) laxatives**
- Ex: psyllium, methylcellulose, bran
- Mech: retaining water in stool
- SE: flatulence, bloating, gut obstruction (rare)

**Stimulant laxatives**
- Ex: senna, bisacodyl, caster oil
- Mech: stimulate myenteric plexus
- SE: abdominal pain, electrolyte imbalance (rare); long-term use → melanosis coli, cathartic colon (rare)

**Osmotic laxatives**
- Ex: MOM, lactulose, PEG
- Mech: increasing the flow of water into intestine
- SE: flatulence, bloating, abdominal cramping, electrolyte imbalance (rare)

**Newer agents**
- Prucalopride (5-HT4 agonist)
- Lubiprostone (ClC-2 activator)
- Linaclotide (GC-C activator)
- SE: N-V, headache, diarrhea

### Constipation: Step-up Approach

- **Mild**
  - High fiber diet
  - Bulk/fiber laxatives
  - Lubricant/stool softeners

- **Moderate**
  - Osmotic laxatives (dose-dependent)
  - Stimulants (dose-dependent)

- **High (purgative)**
  - Newer agents: e.g. lubiprostone, prucalopride
  - NaP, caster oil (not for long-term use)

### Irritable Bowel Syndrome (IBS)

- **IBS: Disease Overview**
  - Diagnosis: based on clinical (ROME IV criteria: abdominal pain associated with defecation, change in frequency or form of stool for ≥3 mo in the past ≥6 mo) + R/O organic disorders
  - Types: IBS-Constipation, IBS-Diarrhea, IBS-Mixed
  - Common aggravating factors: stress, mens, certain foods, and medications (e.g. iron, calcium, Mg, NSAIDs, opioids, anticholinergic, CCBs, etc.)
  - Prognosis:
    - Chronic; often off and on
    - Risks of developing cancer or other organic disorders do not differ from general population

- **IBS: Symptom-based Medications**
  - Constipation
    - Psyllium up to 30 g/d
    - PEG 17-34 g/d
    - Osmotic laxatives
    - Lubiprostone 8 mg BID
    - Linaclotide 290 mg OD
    - Antispasmodics: mebeverine, peppermint oil, dicyclomine
    - TCAs: nortriptyline, amitriptyline, desipramine
    - BBTs: paroxetine, iatroline, citralogram
    - Probiotics

  - Diarrhea
    - Probiotics
    - Rifaximin 550 mg TID x14 d
    - Loperamide 2-4 mg/d
    - Cholestyramine
    - Ramipril 5 mg OD
    - Alestrexon 0.5-1 mg BID
    - Elixadoline 100 mg BID

  - Pain
    - Antispasmodics: mebeverine, peppermint oil, dicyclomine
    - TCAs: nortriptyline, amitriptyline, desipramine
    - BBTs: paroxetine, iatroline, citralogram
    - Probiotics

- **IBS: General Advice**
  - Reassurance: IBS is a "POSITIVE" diagnosis
  - Emotional stress and certain foods e.g. caffeine, fatty foods or alcohol can cause abd. symptoms and loose stools in many people but are more likely to impact those with IBS
  - Low FODMAP diet: if bloating, abd. pain, diarrhea
    - Fermentable
    - Oligosaccharides
    - Dissacharides (e.g. lactose)
    - Monosaccharides (excess fructose)
    - And
    - Polyols (e.g. mannitol, sorbitol, and xylitol)

Adapted from Meier C, et al. Rev Esp Enferm Dig. 2019
**IBS: General Advice**

- Reassurance; IBS is a “POSITIVE” diagnosis
- Emotional stress and certain foods e.g. caffeine, fatty foods or alcohol can cause abd. symptoms and loose stools in many people but are more likely to impact those with IBS
- Low FODMAP diet: if bloating, abd. pain, diarrhea
  - FODMAPs are a collection of short-chain CBHs that aren’t absorbed properly in the gut, which found naturally in many foods and food additives and can trigger symptoms in people with IBS
  - 2-4 week trial to gauge clinical response
  - For responders: stepwise reintroduction of individual FODMAPs to identify triggers

*Adapted from American Gastroenterological Association “Patient centered care”*

**Foods suitable on a low-FODMAP diet**

<table>
<thead>
<tr>
<th>Fruit</th>
<th>Vegetables</th>
<th>Grain Foods</th>
<th>Milk Products</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples, blueberries, strawberries, cherries, cantaloupe, cantaloupe, watermelon, kiwi, mango, papaya, strawberry, pineapple, tangerine, orange, pineapple, cantaloupe, cherry, kiwi, mango, orange, pear, apple, banana, apple, pear, banana, orange</td>
<td></td>
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</tr>
<tr>
<td>Broccoli, cauliflower, brussels sprouts, spinach, kale, collard greens, cabbage, lettuce, endive, arugula, beet, spinach, kale, collard greens, cabbage, lettuce, endive, arugula, beet, spinach, kale, collard greens, cabbage, lettuce, endive, arugula, beet</td>
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<tr>
<td>Rice, quinoa, basmati rice, brown rice, white rice, barley, farro, wheat, oats, corn flakes, millet, sorghum, buckwheat</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, yogurt, kefir, cheese, butter, cream</td>
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</tr>
<tr>
<td>Honey, maple syrup, agave, and other sweeteners</td>
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</tbody>
</table>

**Chronic Hepatitis B (CHB): Treatment Indications**

- High HBV-DNA
  - >2,000 IU/ml
- Significant liver inflammation and/or fibrosis
  - ALT > 2 x ULN for ≥3 mo
  - Biopsy: HAI ≥4
  - Fibroscan > 7.0 kPa
- NO (inactive or borderline CHB)
- YES (active CHB)
  - Discuss treatment
  - Continue monitor

HCC surveillance by US ±AFP q 6-12 mo: if male >40 yr, female >50 yr, FHx of HCC and advanced fibrosis

**Assessment of Liver Histology**

- Liver biopsy
  - Gold standard
  - Evaluate all histological aspects
  - Assess causes of liver disease
  - Pain, bleeding and organ injury
    - 3:100 need blood Tx
    - 3:1,000 need Sx or RI
    - 3:10,000 death
  - Sampling errors
  - Need of experienced pathologist

- Transient elastography
  - Non-invasive
  - Assess fibrosis ± fat (accuracy OK)
  - TE > 7.0 ~ significant fibrosis
  - TE > 14.0 ~ cirrhosis
  - Limitations: obesity, ascites, narrow rib spaces
  - Altered by: operator experience, ALT flares, CHF, non-fasting
**CHB: General Advice**

For patients without treatment indication
- Requires life-long follow-up – schedule regular visits and HCC surveillance
- Up to 40% may become active (and may require treatment) in the future
- Eating clean, cooked and healthy diet
- Avoid aflatoxin-contaminated foods
- Avoid drinking alcohol and smoking
- Avoid or talk with your doctor before using herbal products or OTC medications
- Get the HAV vaccine (test anti HAV first)
- Prevent transmission and testing family members

**Aflatoxin-contaminated Foods**
- ปลาสลิด
- พริกป่น
- ข้าวโพด
- น้ำมันจาก เมล็ดพืช
- Aflatoxins are carcinogens that are produced by certain molds (Aspergillus spp.) which grow in soil, decaying vegetation, hay, and grains
- Heat-resistant (need heat >260°C to degrade)

**CHB: General Advice**

For patients with treatment indication
- Controllable in all cases (cure in only 1-3%)
- Requires long-term therapy: many yr for HBeAg+ (may be life-long) and life-long for HBeAg–
- Reduce the risk of HCC (not completely prevent)
- Emphasize the importance of medication adherence and follow-up visits
- Nucleos(t)ide analogs
  - Lamivudine, tenofovir, entecavir are ED drugs
  - Minimal side effects, long-term safety: good
  - Tenofovir nephrotoxicity: incidence 3-15%, risk factors?, require monitoring (manageable)

**Chronic Hepatitis C**

**HCV Treatment Approach: Thailand 2019**

- Age 18-70 yr
- HCV-RNA >5,000 IU/ml
- Fibroscan 27.0 kPa (or Bx ≥F2)
- Stopped drinking ≥6 mo
- No severe comorbidities (GFR ≥30) or CA
- If cirrhosis, CP score ≤9 and MELD ≤18

**IF HIV on HAART**
- HIV-RNA <40
- CD4 ≥200

**Genotype 2 or 3**

- SOF + Peg/ RBV 12 wk
- SOF-LDV 12 wk (+RBV if Fibroscan >12.0)

**Genotype 1 or 6**

- SOF-VEL 12 wk (+RBV if decomp cirrhosis)
- SOF + DCV 12 wk (16-24 wk +RBV if cirrhosis)

**IF IFN ineligible**
- GZR-EBR 12 wk
- Alternative

**CHC: About DAA Therapy**

- Curable in >95% of patients
- Cure = SVR = undetectable HCV-RNA at 12 wk after stop therapy → prevent (or reverse) disease progression, reduce HCC and improve survival
- DAAs are increasingly accessible
- Treatment course: often 1-3 pills/d for 12 wk
- Minimal side effects (no sofosbuvir, if GFR <30)
- Emphasize medication adherence
- Check for drug interaction, avoid PPI if possible
- HCC surveillance, if advanced fibrosis (continue surveillance life-long after SVR)
Transmission: HBV and HCV

<table>
<thead>
<tr>
<th>Mode of transmission</th>
<th>HBV</th>
<th>HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood/serum exposure</td>
<td></td>
<td></td>
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<tr>
<td>Sexual transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother-to-child (perinatal)</td>
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<td></td>
</tr>
<tr>
<td>Not transmitted</td>
<td>Eating, drinking, kissing, using toilet, breast feeding</td>
<td>Eating, drinking, kissing, using toilet, breast feeding</td>
</tr>
<tr>
<td>Vaccination</td>
<td>Yes (&gt;95% efficacy, but ↓ in elderly &amp; immunocompromised patients)</td>
<td>Not available</td>
</tr>
<tr>
<td>Risk from needle stick</td>
<td>2-50%; depends on HBV-DNA (risk x100 vs HIV)</td>
<td>1.8% (risk x10 vs HIV)</td>
</tr>
<tr>
<td>Post-exposure management</td>
<td>Baseline anti-HBs, HBsAg FU HBsAg (if still + at 6 mo → evaluation as CHB)</td>
<td>Baseline anti-HCV Check HCV-RNA at ≥3 wk after exposure and FU (if still + at 3-6 mo → Rx by DAA)</td>
</tr>
</tbody>
</table>

Cirrhosis and Portal Hypertension

Cirrhosis: Specific Treatment and Prognosis

**Etiology-specific treatment**
- HBV, HCV – antiviral therapy
- Alcohol – stop drinking, reassess over time

Liver transplantation
- Outcome: >80% survival at 5 yr
- Limited access in Thailand (80-100 cases/yr)
- Indications: MELD ≥15, decompensation events

Overall prognosis
- Child A: median survival 10-20 yr
- Child B: median survival 3-5 yr
- Child C: median survival 1-2 yr

Ascites: OPD Management

- Diuretics:
  - Spironolactone ± furosemide (ratio 100:40 mg) with gradual titration
  - Possible side effects: gynecomastia, muscle cramps, hyper/hypo-K, hypo-Na, AKI
- Moderate Na restriction (<3 g/d or เชื้อ 1.5 ชั่ว) – No added salt diet with avoidance of prepared meals
- Avoid NSAIDs
- Water restriction, if refractory ascites + hypo-Na
- LVP as needed (give IV albumin, if tap >4 lit)
- Educate: signs of SBP → come to the hospital

Small EV Large EV

Cirrhosis: Diet and Nutrition

- Eating an adequate amount of calories (35-40 kcal/kg/d) and protein (1.2-1.5 g/kg/d)
- Split your food into 5-6 meals/snacks per day including the late evening snack (most important)
- Patients with hepatic encephalopathy may tolerate animal protein less well than vegetable and dairy proteins (but do not restrict protein)
- Branched-chain amino acid supplementation at nighttime ± morning (10-20 g/d) in patients with advanced cirrhosis or encephalopathy
- Avoid aflatoxin-contaminated foods
- Multivitamin, calcium (1-1.5 g/d) and vitamin D
- Avoid too much iron, vitamin A and manganese

EV: OPD Management

- Screen for EV by EGD (all pt. with cirrhosis)
- If no or small EV:
  - Follow-up EGD q 1-3 yr
- If large EV:
  - Start propranolol; titrate to keep HR 55-60/min, avoid SBP <90 mmHg
  - Possible side effects: fatigue, weakness
  - No need to follow-up EGD
- Avoid activities that increase abdominal pressure
- Educate: signs of UGIB → come to the hospital
Cirrhosis: Prevention of Infection

**Avoidance**
- Raw/uncooked foods, especially seafood
- Wound exposure to flood or seawater
- Close contact to at-risk animals or sick people

**ATB prophylaxis e.g. norfloxacin**
- GI bleeding (7 d)
- Previous episode of SBP
- Advanced cirrhosis + low ascitic protein (<1.5)

**Vaccination**
- HAV, HBV (increased severity)
- Influenza (increased susceptibility + severity)
- Pneumococcal (increased susceptibility + severity)

Common Disabling Symptoms in Cirrhosis

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sample question(s)</th>
<th>Treatment options</th>
</tr>
</thead>
</table>
| Muscle cramping           | How often during the last 2 wk have you had muscle cramps? | - Minimize diuretics
- Taurine (3 g)           |
- Vitamin E (600 IU)      |
- Baclofen (5-10 mg TID)  |
- Albumin infusion        |
- Quinine 150-300 mg/d    |

| Pruritus                  | How much of the time have you been troubled by itching during the last 2 wk? | - Moisturizer for dry skin
- Chloroquine (5 mg daily) |
- Sertindol (75-100 mg daily) |
- UDCA (10-15 mg/kg/d)     |

| Sleep disturbance         | Have you had difficulty sleeping at night? Have you felt sleepy during the day? | - Optimist treatment for HE
- Optimist sleep hygiene   |
- Melatonin (3-5 mg/d)     |
- Hydralazine, low-dose BZ2a |

| Sexual dysfunction        | Have you had any sexual activity in the past few wk? How satisfied were you with your sexual function? | - Sildenafil 25-100 mg PRN
- Sex therapy referral    |
- Referral to Urology      |

Non-alcoholic Fatty Liver Disease (NAFLD)

NAFLD: Disease Overview

- Simple steatosis
  - None to minimal progression to cirrhosis
  - Similar or slightly increased overall mortality (esp. CV disease) compared with general population
  - Increased incidence of MetS (OMI, HT, DLP)
  - Increased overall mortality (CV disease, malignancy, liver-related death) compared with general population
  - Increased incidence of MetS (OMI, HT, DLP)

- NASH
  - 0-3% in 20 yr

- HCC
  - 2-13% in 5-10 yr

- Liver failure
  - ~30% in 5-10 yr

Risk Stratification in NAFLD Patients

**Low-risk profile**
- BMI < 30
- Age < 40-50 yr
- No T2DM or MetS features
- Noninvasive fibrosis estimation:
  - FIB-4 < 1.30
  - APRI < 0.5
  - NFS < -1.455
  - Fibroscan < 5 kPa

**Intermediate-risk**
- BMI > 30
- Age > 40-50 yr
- Multiple features of MetS esp. T2DM
- Noninvasive fibrosis estimation:
  - FIB-4 1.30-2.67
  - APRI 0.5-1.5
  - NFS -1.455-0.675
  - Fibroscan 6-11 kPa

**High-risk profile**
- AST > AST level
- Platelets < 150,000
- Noninvasive fibrosis estimation:
  - FIB-4 > 2.67
  - APRI > 1.5
  - NFS > 6.675
  - Fibroscan > 11 kPa

**Likely significant fibrosis and/or NASH**

Likely “advanced fibrosis”

Consider liver biopsy in selected cases

Adapted from Rinella ME, Sanyal AJ. Nat Rev Gastroenterol Hepatol. 2018;15:196-203
**NAFLD: Lifestyle Modification**

- **Weight reduction**
  - Hypocaloric diet (~500 kcal energy defect/d) to induce gradual wt. loss
  - Target: wt. loss ≥3-5% BW to improve steatosis and ≥7-10% BW for NASH/fibrosis
- **Exclusion of NAFLD-promoting components** e.g. fructose and processed food
- **Alcohol**: strictly keep alcohol below the threshold
- **Coffee drinking** (black regular coffee) is OK
- **Both aerobic exercise and resistance training** are effective (150-200 min/wk of moderate intensity aerobic physical activities in 3-5 sessions)

Adapted from EASL-EASD-EASO Guideline 2016

**NAFLD: Medications**

- **Optimize treatment of metabolic comorbidities**
  - Statins are safe and well-tolerated in NAFLD
- **Pharmacotherapy** should be reserved for patients with NASH, particularly with significant fibrosis (by liver biopsy or non-invasive tools)
- **Duration**: unknown; ALT often rebound after stop
- **Vitamin E 400-800 IU/d**
  - ↓ steatosis, ↓ NASH
  - Avoid high dose (? hemorrhagic stroke, CA prostate)
- **For those with DM (and IFG)**
  - Pioglitazone: ↓ steatosis, ↓ NASH, ↓ fibrosis
  - If obese, GLP-1RA (and SGLT-2 inh) may be effective

Adapted from EASL-EASD-EASO Guideline 2016 and AASLD Guideline 2018

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Thank You for Your Attention

Email: dr.chalermrat@gmail.com