

# Dr. Wu's Liver Diseases (Hepatitis,...)

## *PBL for the diagnosis of Liver Disease*

*Dr. Wu's Liver diseases  
for professionals (medical students and residents)*

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## *PBL for the diagnosis of Liver Disease*

### ● What is PBL and PBeL ?

- Traditional medical education --- Lectures in the classroom by a teacher.
- Integration of basic and clinical medical knowledge.
- Problem-based or Practice-based Learning (e: electronic).
- Best method of learning medical knowledge technique and in bedside teaching.
- Problem of the patient's physical condition (character, mechanism, etiology, diagnosis, treatment)
- Small group teaching and an instructor.
- Search and study of resources for solving problems from journals, references, and Internet contents by students themselves.

### ● What is a liver ?

- Liver is the **largest** and the **most complex** organ in the body, located in the right upper part of the abdomen, and it is usually not palpable from the abdominal wall.

- Under the liver, there is a **gall bladder**, the liver and gallbladder are connected by ducts known as the **biliary tract**.
- **Refer to:**
  - [Structure and physiology of the liver](#)
- **What is a liver disease?**
  - Most of the liver disease is a condition in which the **normal structure** and **physiological function** of the liver is damaged.
  - The other two conditions are **congenital** and **new growth** of the liver.
  - And the most of the **new growths** of the liver are **derived from the damages** of the liver.
  - **Refer to:**
    - [How to approach a liver patient](#)
    - [Classification of liver diseases](#)
    - [Common liver diseases in Taiwan](#)
- **What is the main symptoms and signs of the liver disease ?**
  - Jaundice (sclera, skin).
  - Pruritus.
  - Hepatomegaly.
  - Flu-like symptoms, headache, muscle pain, fever.
  - Malaise, fatigue, weakness.
  - Nausea, vomiting.
  - Fever.
  - RUQ Pain.
  - Deep discoloration of urine.
  - Clay color stool.
  - [Portal hypertension](#) (splenomegaly, esophageal varices, ascites, edema of the lower legs)
  - Spider angiomas (nevi), palmer erythema, engorgement of superficial veins of the

abdomen and thorax, gynecomastia.

- Bleeding tendency (Purpura: ecchymosis, petechiae, suggilation)
- Hemopoiesis: anemia, leukopenia, thrombocytopenia
- Encephalopathy (drowsiness, tremor, asterixis, dysarthrias, delirium, coma)
- No any symptoms and signs.
- **Refer to:**
  - [Clinical features of acute viral hepatitis:](#)
  - [Clinical features of chronic hepatitis:](#)

- **Laboratory data of liver diseases**

- Transaminase (ALT -- GPT, AST -- GOT).
- Bilirubin.
- Biliary enzymes (Al-P, GGTP).
- Albumin.
- Globulin.
- Ammonia.
- Amylase.
- Ceruloplasmin, serum copper, urine copper
- Serum ferritin, transferrin saturation, iron
- Alpha-1-antitrypsin
- Hepatitis marker (anti-HAV, HBsAg, anti-HBs, anti-HBc, HBeAg, anti-HBe, anti-HCV, anti-HEV).
- Tumor marker (AFP, AFP-L3, CEA, Isoenzymes, PIVKA-II, CA19-9 )
- PIIIIP, IV Collagen, TGF- $\epsilon$ ]
- **Refer to:**
  - [Introduction to liver test](#)
  - [Item of liver test](#)

- [Implication of liver test](#)
- [Liver-cell function test](#)
- [Bilirubin metabolism](#)
- **Image diagnosis of liver diseases**
  - Simple X-ray film
  - Ultrasonography
  - Endoscopic ultrasonography
  - CT
  - Angiography
  - MRI
- **How to proceed the diagnosis of liver diseases**
  - SOAP (Subjective, Objective, Analysis, Planning)
  - PBL (Problem based learning), PBeL (Problem based e-learning)
- **Neighboring organs of the liver**
  - Lung, diaphragm, gall bladder, bile duct, duodenum, stomach, pancreas and transverse colon.
  - Pain and tumor.



## Practical application

- **SOAP = PBL**
- **Basic data:**
  - Name, age, sex
  - Residence history:
    - past, present, and duration.
    - Travelling.
    - What is the endemic diseases of the indwelling or travel place. (i.e: HAV, HEV,

## Dengue fever, Schistosomiasis)

- **Past history: (alcoholics, drug intake, IVDA, infection)**
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### Case 1: Da-Ming Yang. 72 yrs old, male

- **S: (subjective) Chief complaint:**
    - Fever, epigastralgia, vomiting, jaundice for 3 days.
  - **Residence and travelling**
    - Living in Taipei city for 50 yrs.
    - Came from mainland China at the age of 22.
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- **Analysis**
    - **Epigastralgia:** position neighboring organ:
    - **Nausea, vomiting:** G-I tract dis., acute & chronic hepatitis, biliary tract dis., pancreatitis, and other diseases.
    - **Jaundice:** Bilirubin
      - Liver: infection, cirrhosis, neoplasm.
      - biliary tract: stone. infection, neoplasm.
      - Hemolysis.
    - **Fever:**
      - Infections: Bacteria, Rickettsia, Chlamydiae, Mycoplasma, Virus, Parasite,
    - **Refer to:**
      - Virus -- liver damage
      - Viral hepatitis -- History
        1. Viral hepatitis A

2. [Viral hepatitis B](#)
3. [Viral hepatitis C](#)
4. [Viral hepatitis D](#)
5. [Viral hepatitis E](#)
6. [Viral hepatitis F and G](#)
7. [TTV](#)

- [Definition of chronic hepatitis](#)
- [History of chronic hepatitis](#)

- Malignant neoplastic disease:
- Hematologic disease:
- CNS diseases:
- Factitious :
- Diseases of other systems:

- **Residence history in China:** [Kala azar \(Leishmaniasis\)](#), Schistosomiasis, Clonorchiasis (intake of raw fresh water fish)
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## ● Past history

- [Alcohol](#) intake for more than 30 yrs. (chronic alcoholics).
  - History of [jaundice](#) 5 yrs. ago, but no further study at that time.
  - Occasional [eigastralgia](#).
  - No history of any drug intake ([Drug-induced liver disease](#))
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## ○ Analysis

- Liver disease: (alcoholic, infection)
- Biliary tract disease:

- **Pancreatitis:**
  - (G-I tract)
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- **Physical examination**

- **Skin:** slightly icteric.
  - **Sclera:** mod. icteric.
  - **Spider angiomata on upper chest.**
  - **Hepatomegaly (3 cm below right costal margin)**
    - **Margin:** dull
    - **Consistency:** firm.
    - **Surface:** irregular, no mass.
  - **Portal hypertension:**
    - **Ascites:**
      - **Abdomen:** slight frog belly.
      - **Superficial venous engorgement on abdominal wall.**
      - **Shifting dullness (+).**
    - **Splenomegaly:** (3 cm below left costal margin)
    - **Lower leg pitting edema (+).**
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- **Analysis**

- **Chronic liver disease (chronic hepatitis, cirrhosis, HCC) -- (alcoholic, viral)**
  - **Chronic biliary tract diseases (stone, PBC)**
  - **Pancreatitis (alcoholic)**
  - **(G-I tract disease)**
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- **Laboratory data:**

- RBC: 334 x 10<sup>4</sup>
- WBC: 8,200
- Platelet: 70,000
- Bilirubin: Direct: 3.2, Total: 4.6
- AIP: 112 U; GGTP: 340 U.
- ALT: 62 IU; AST: 176 IU.
- Amylase: 310
- HBsAg (+), anti-HBc (+), anti-HBs (-), anti-HCV (-), HBeAg (+) ([HBV](#))
- AFP: 5.3 ng.([Hepatitis virus and hepatocellular carcinoma.](#))

- **Image & endoscopic study:**

- Abdominal echo: [Fatty liver](#)
  - Panendoscopy of upper G-I tract: [Esophageal varices.](#)
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- **Analysis**

- Portal hypertension
  - Chronic liver disease (cirrhosis)
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- **Final Diagnosis:**

- [Cirrhosis of the liver](#) : Etiology ([HBV](#) and [Alcoholic](#))
  - [Acute alcoholic hepatitis](#)
  - [Chronic relapsing pancreatitis.](#)
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