- Resmi, 18 years staying in a college hostel, brought in the outpatient clinic of medical college complaining of **fever, head ache, nausea and yellowish discoloration of sclera O/E: febrile, Jaundice + liver palpable**

Laboratory data:

- Total bilirubin- **6 mg%** (0.3-1.2 mg/dl)
- Conjugated bilirubin- **2.6 mg%** (0.1-0.4 mg/dl)
- ALP- **200 IU/L** (40-125 IU/L)
- ALT- **80 IU/L** (10-35 IU/L)
- AST- **70 IU/L** (8-30 IU/L)
- Urinary Bile salts- **+**
- Urinary Bile Pigment- **+**
- Urinary Urobilinogen- **Trace**

- What kind of illness, the girl is suffering from?
- Evaluate the clinical condition by the laboratory data provided?

- The girl is suffering from **hepatic jaundice**.
- The clinical features **fever, headache and nausea** are suggestive of an **infection** and the finding of **liver enlargement** with yellowish discoloration is suggestive of **hepatic jaundice**

- Laboratory data confirms the hepatic origin of jaundice

Serum bilirubin levels

- Elevated total bilirubin levels suggest jaundice
- Hepatocyte dysfunction affecting **glucoronyl transferase** activity caused **elevation of unconjugated bilirubin (6-2.6=3.4 mg%)**
- The **delayed clearance of CB** due to blockage of biliary micro channels by **inflammation** leading to **slight hike** in its level

Serum enzymes

- Rise in transaminase shows **injury to hepatocyte** and its release from the cytoplasm of hepatocytes due to infection.
- **Slight elevation of ALP** points towards the release of membrane bound ALP resulting from **pressure effect produced by inflammatory swelling of biliary lining cells caused by infection**.

- Urinary finding of **positive bile salts** and **bile pigments** again indicate the patient is in **the obstructive phase of hepatic jaundice** i.e. infection causing inflammation of lining cells of biliary canaliculi which results in **regurgitation of biliary content** in to blood stream.
- When blood levels of these compounds crosses the **renal thresh hold for that substance, it gets excreted in urine-** thus **CB** and **bile salts** are excreted in urine

- **Urobilinogen in trace amount** suggests that there is **no severe obstruction** as in biliary stone, strictures etc which cause **complete obstruction of biliary flow** in to intestine.

- **How to differentiate hepatic jaundice from obstructive jaundice due to stones,tumors or other obstruction in biliary tract?**

Serum bilirubin values

- In **obstructive jaundice the level of CB will be much higher** than the **hepatic jaundice** and **UCB values remain within normal limits**

Enzymes

- **Transaminase** values generally remain **within normal range** but **ALP** values will be **very high in obstructive jaundice**

Urinary findings

- **Bile salts + ve** and **CB + ve** and **urobilinogen will be absent.**
- Due to **biliary obstruction CB** can not reach the intestine in **obstructive jaundice** and hence **urobilinogen can not be formed** as in normal situation.
- Urine will be giving **negative response to Ehrlich's test** and the patient will complain of passing **clay coloured stools** due to **absence of stercobilinogen** in feces.

- **Kurinji, 45 years old woman, a tribal hailing from waynaud district with severe tiredness and severe pain all over the body O/E: Pallor+, Jaundice +, Hepatosplenomegaly**.

- Based on clinical and laboratory data what is your **provisional diagnosis**?
- What **other tests** do you require to **confirm diagnosis?**

Laboratory data

- Hb- **7 g%**
- Sickling test- **+ve**
- Total bilirubin- **10 mg%**
- CB- **0.6 mg%**
- UB- **9.4%**
- ALP- **45 IU/L**
- ALT- **14 IU/L**
- AST- **20 IU/L**

URINE

- Bile salts- **Negative**
- Bile pigment-**Negative**
- Urobilinogen- **Strongly positive**

- The women is suffering from **hemolytic jaundice** probably due to **sickle cell disease**.
- **Total bilirub**in and **UCB** are **high**- suggesting increase in bilirubin **not due to any obstruction in the biliary passages**.
- **Serum enzyme** studies show **normal activities** indicating that hepatocytes are not involved in disease process thereby **excluding hepatic jaundice**.
- **Absence of bile salts and bile pigment** in **urine** show that jaundice is not due to **any obstruction**.

Increased urobilinogen is due to **increase rate of RBC break down** producing maximum amount of **conjugated bilirubin** getting secreted into intestine and converted to **urobilinogen in increasing amounts** which is then absorbed from intestine in to blood and **excreted in urine in excess amount**.

The **positive sickling test**, **tribal origin** of the woman and the kind of pain is suggestive of **sickling crisis** and strongly suggestive of **sickle cell disease**.

It is to be confirmed by **Hb electrophoresis**

- Meenakshi,58 year old woman c/o pain in the upper right side of the abdomen, fever with chills, pruritus , passing dark color urine and clay colored stools. O/E: Jaundice +, scratch marks on the skin +, fever+.
- From the following laboratory data explain what would be provisional diagnosis?
- Serum TB- **12 mg%**
- CB- **10 mg%**
- ALP- **300 IU/L**
- ALT- **30 IU/L**
- AST- **18 IU/L**

Urine

- Bile salts- **+ve**
- Bile pigment- **+ve**
- Urobilinogen- **Negative**

- The lady is suffering from **obstructive jaundice (cholestasis)**
- **Total bilirubin and conjugated bilirubin is high –** suggesting of **obstruction of biliary passages** leading to **cholestasis.**
- Serum enzyme studies shows **high ALP** indicating **obstructive type of jaundice** and **normal transaminases** giving an idea **hepatocytes are unaffected** by the disease process.

- **Urine- Test for Bile salts (Hay's test) +ve-** supporting the diagnosis of **obstructive jaundice**.

- **Obstruction of biliary passages** causing stasis of its contents leading to **regurgitation of its constituents** into blood and thereby elevating the concentration of **CB** and **bile salts** in to blood.

- **Bile salts** has a tendency to get **deposited in the skin** causing **intense pruritus** and **CB** and **Bile salts** will be excreted in urine

Serum bilirubin (mg%)	*ALP (IU/L)*	*Transaminases (IU/L)*	*Urine-bilirubin*	*Urine-bile salt*	*Urine-urobilinogen*	*Comment on the condition*
TB – 8 CB – 3.5 UCB – 4.5	150 IU/L	ALT- 60 AST - 50	Present	Present	Trace	a) ?
TB – 7 CB – 0.3 UCB – 6.7	88 IU/L	ALT- 25 AST - 15	Absent	Absent	Increased	b) ?
TB – 0.8 CB – 0.3 UCB – 0.5	60 IU/L	AST - 10 ALT- 20	Absent	Absent	Trace	c) ?
TB – 14 CB – 13 UCB – 1.0	280 IU/L	AST - 18 ALT- 30	Present	Present	Absent	d) ?