

Liver –Functions, Disorders and Diagnostic Tests

By:

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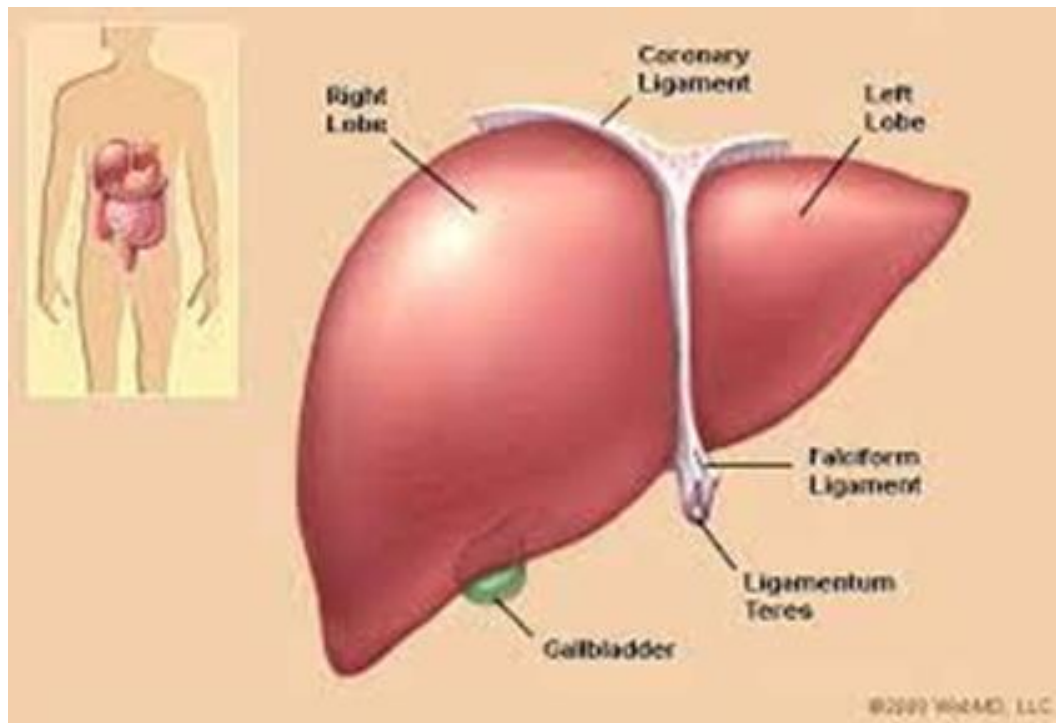
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Objectives

- Functions of liver?
- Essential biochemical tests which are required to assess the function of liver
- Explain the biochemical basis of Liver Function tests
- Discuss interpretation results of biochemical alterations in patients

Liver

- Largest solid organ, right upper quadrant
- •Large reserve capacity
- •Capable of regeneration



- ●Functions:
- ✓ Metabolism: Carbohydrates, Fat, protein, xenobiotics, hormones
- ✓ Synthesis: Albumin (Alb), α and β globulins, coagulation factors
- ✓ Storage: Glycogen, fluids, vitamins, minerals

Some examples of Liver dysfunction

- Hepatocellular diseases (viral hepatitis, ...)
- Cholestatic disease (intra and extra hepatic obstruction)
- Cirrhosis
- Cancer (secondary or primary)
- Fatty Liver
- Genetic Disorders
 - ✓ Hemochromatosis(iron storage)
 - ✓ Wilsons disease

Liver dysfunction diagnosis

- The diagnosis of liver disorder depends on a combination of patient history,

physical examination, **laboratory testing,**

biopsy and imaging studies such as ultrasound / CT/ MRI scans

Liver Function Test Used to

- detect the presence of liver disease
- distinguish among different types of liver disorders
- measure the extent of known liver damage
- follow the response to treatment

Liver Function Test

points should be considerable:

- Liver—a numerous of biochemical functions almost cannot be measured
- Enzymes—could not estimating only to measure liver function— to detect damage or interference with the bile flow
- Interpretation must be performed within the context of the patient's risk factors, symptoms, concomitant conditions, physical findings and medications
- Differing laboratories → Differing normal values

- No only one test enables the clinician to assess a total functional capacity of liver accurately
- Increase the sensitivity and specificity
- When one test shows abnormal finding or persistently abnormal on serial determination—probability of liver disease is high
- Commonly employed tests: Bilirubin, Aminotransferases (ALT, AST), Alkaline phosphatase (ALP), Albumin (ALB), and Prothrombin time

Sample collection

- Serum or plasma
- Avoid haemolytic and lipemic sample
- Urine tests useful in suspected hepatic disease e.x. bilirubin (conjugated hyperbilirubinemia) and urobilinogen
- Sample transport/storage
- Precautions (viral hepatitis B and C)

Reference:

