

Categorization of the most common liver diseases by enzyme levels

Cirrhosis

- Bilirubin > 2
- AST and ALT greater than ALP where both are elevated

Alcoholic Liver Disease

- ALT/AST < .5

Fatty Liver Disease

- ALT > 50

Hepatitis C

- ALT > 200
- ALT/AST > 2
- Albumin < 3.5

Information about Liver Enzyme Markers

Total Bilirubin (.1-1 mg/dl)

Definition:

Unconjugated: Breakdown products of RBC

MCC of Elevation

Prehepatic: Hemolytic Anemia, Hemorrhage

Hepatic: Cirrhosis, Viral Hepatitis

Post Hepatic: obstruction of the duct

Conjugated: (See Direct Bilirubin)

Direct Bilirubin (.1-.04 mg/dl)

Definition:

Conjugated: Bilirubin is hydrophobic UDP-GT is added to make it hydrophilic so that we can excrete it

MCC of Elevation

Bile Duct Obstruction due to gallstones, hepatitis, cirrhosis or cancer.

Alkaline Phosphatase(30-120 IU/L)

Definition:

Cells that line the biliary tracts of the liver.

MCC of Elevation:

Bile Duct Obstruction

Intrahepatic cholestasis

Aspartate Transaminase(AST) 6-40 IU/L and ALT(7-56 IU/L)

Definition:

Sign of Hepatic Liver Damage or Injury

MCC of Elevation

Acute/Chronic Viral Hepatitis : 25x the level of ULN

Serum Albumin 3.5-5

Definition:

A common protein which maintains ion concentrations in the body

MCC of Decreased Level

Inability to form the protein due to liver damage such as cirrhosis from any chronic liver condition