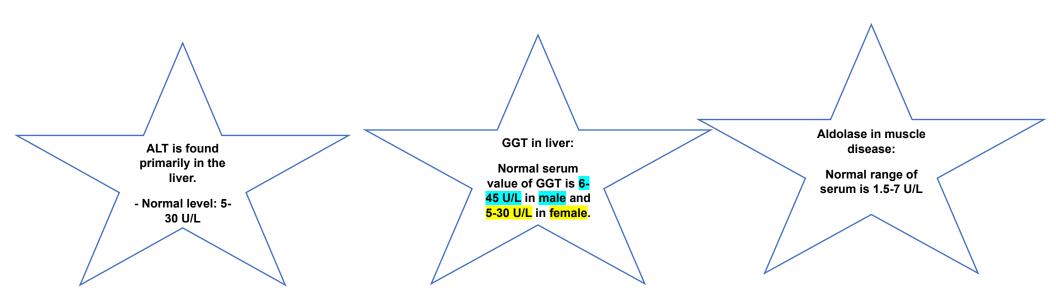
## Serum enzymes and other biomarkers in acute MI

From where	1- Creatine kinase (CPK)	2- Aspartate amino transferase (AST)\(SGOT)	3- Lactate dehydrogenase (LDH)	4- Cardiac troponins	5- Myoglobin as cardiac marker	Brain Natriuretic Peptide (BNP)
Normal level	10-50 U/L at 30°C	8-20 U/L at 37°C	55-140 U/L at 30°C			
Increase within	3-6 hours	sharply within the first 12 hours	12 to 24 hours		1 hour	
Reach peak level in	24- 30 hours	24 hours or over	48 hours (2 to 4 days) reaching about 1000 U/L			
Return to normal level in	2-4 days (usually in 72 hours)	3-5 days.	8 - 14 day			

Troponin	Early Rise(hrs)	Peak (Hrs)	Duration (Days)	Specficity	Sensitivity
Tn T	4-6	10-24	10-24	80%	>98%
Tnl	3-6	1-24	4-7	95%	>98%



## Serum enzymes in GI tract diseases

From where	1- Amylase	2- Lipase	3- Enolase	4- Prostate specific antigen (PSA)	5- Cholinesterase	6- Glucose-6- phosphate dehydrogenase
Normal level	50- 120 U/L	0.2-1.5 U/L		1 -5 μg/L	Acetyl cholinesterase (true cholinesterase or Type 1 cholinesterase): 2-12 U/ml      Pseudocholinesterase or type II cholinesterase: 8-18 U/ml	- Normal value of GPD in RBC is 125-250 U/1012 cells.
Increase within	Serum activity > 1000 units is seen within 24 hours	Levels as high as 2800 U/I are seen in acute pancreatitis and persists for 7- 14 days	- Upper limit of NSE is 12 μg/ml.		<b>5</b> ,	
Marker to	1- acute pancreatitis 2- perforated peptic ulcer 3- intestinal obstruction	1- acute pancreatitis 2- perforated duodenal and peptic ulcer 3- intestinal obstruction 4- mumps	NSE is a tumor marker for cancers associated with neuro – endocrine origin:  1- small cell lung cancer,  2- neuroblastoma,  3- pheochromocytoma,  4- medullary carcinoma of thyroid	-Values between 4-10 µg/L is seen in benign prostate enlargement; but values above 10 µg/l is indicative of prostate cancer		