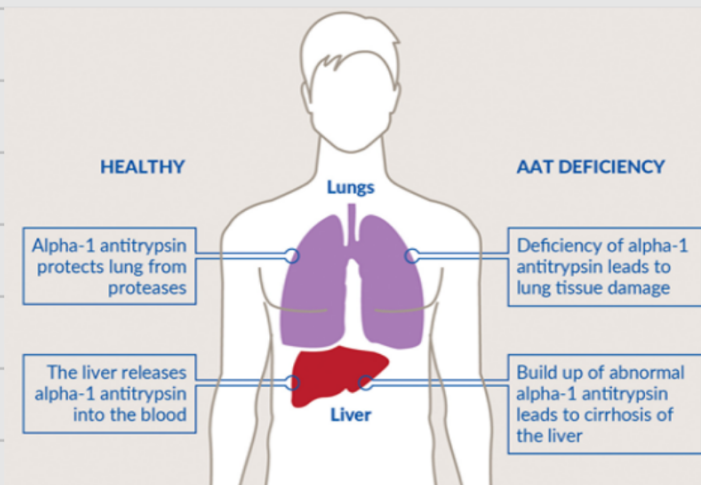


1. α 1 - antitrypsin

- Increased level in acute phase response \uparrow
- function Neutralizes (inhibits) trypsin
- many Forms (75)
- 4 Alleles (M/5/2/5)



Deficiencies:
emphysema \Rightarrow genetic (22/57)
 \Rightarrow MS/12 not effected
chronic Inflammation \Rightarrow
oxidation
of met in antitrypsin protein \Rightarrow
smoking (mostly 22)
22 polymerization (B-sheet)
 \Rightarrow Aggregates in liver \Rightarrow
Cirrhosis

2. α 1 - fetoprotein

- Increased in hepatoma and acute hepatitis/ pregnant women \uparrow
- synthesized by fetal Yolk sac and liver parenchymal cells (\downarrow in adults)
- Functions: protect the fetus, growth, transport steroids and low level indicates risk of down syndrome

3. α 1 - acid glycoprotein or Orosomucoid

- Increased level in acute inflammation and cirrhosis of liver \uparrow
- Decreased level in liver diseases, malnutrition and nephrotic syndrome \downarrow
- functions: transports progesterone and transports carbohydrates to site of injury

4. Haptoglobin

- Increase level in acute inflammation \uparrow
- Decreased level in hemolytic anemia \downarrow

- ▣ A tetramer (2Alpha/2Beta) ⇒ 3 phenotypes
- ▣ function: Binds to free hemoglobin ⇒ preventing it's loss

5 ▣ Ceruloplasmin

- ▣ **Decreased level in liver disease ex: Wilson's disease (genetic)** ↓
- ▣ functions: regulates Cu levels, can work as a ferroxidase

6 ▣ α₂-Macroglobin

- ▣ **Increase level in nephrotic syndrome** ↑
- ▣ synthesized by hepatocytes and macrophages
- ▣ function: inactivates proteases, Vivo anticoagulant and growth factors carrier

7 ▣ Haemopexin

- ▣ **Increased level in pregnancy, diabetic mellitus, malignancies and Duchenne muscular dystrophy** ↑
- ▣ **Decreased level in hemolytic disorders, at birth and drugs** ↓
- ▣ synthesized in liver
- ▣ function: binds hem

8 ▣ CRP

- ▣ **Increased level in inflammatory diseases and tissue damage (Peaks after 48 hours)** ↑
- ▣ function: helps in defense against pathogens

9 ▣ Complement C1 q

- ▣ **Increased level in chronic infections** ↑
- ▣ **Decreased levels in circulating Antigen Antibody complex** ↓
- ▣ function: first complement factor to bind antibody ⇒ triggers complement pathway

10 ▣ Gamma - globulin

- ▣ Defense mechanism of the body
- ▣ five types of immunoglobins (IgG/IgM/IgA/IgE/IgD)

11 Fibrinogen or clotting factor 1

- ▣ structure: highly elongated/ 6 polypeptide chains linked by S-S
- ▣ linkages /Negative amino end
- ▣ synthesized in the liver
- ▣ function. imparts maximum viscosity

Acute phase proteins

positive (increased)

CPR
Ceruloplasmin
antitrypsin
macroglobulins
acid glycoprotein

negative (decreased)

Albumin
transthyretin
Retinol binding protein
transferrin

by mahde sabbagh
Good luck :)