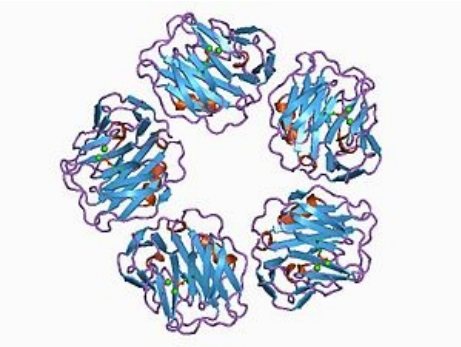
C-reactive protein


C-reactive protein

C-reactive protein (CRP) is one of the most important acute phase reactants. It is a protein that plays the role of opsonins. It got its name due to the fact that it precipitates with the so-called C-polysaccharide of pneumococci[1].

The plasma concentration of CRP **increases as early as 4 hours** after induction of the acute phase reaction and within the first two days, its concentration increases **more than 100-fold**. The maximum concentration is reached in 24-48 hours and the half-life of CRP is approximately 24 hours[2].

Physiologically, the plasma concentration is up to 8 mg/l[3]. A rapid and high rise in CRP (typically to values above 60 mg/L) primarily accompanies **acute bacterial infections** and less commonly mycotic infections. Viral infections, on the other hand, tend to be characterized by a relatively small rise in CRP (usually below 40 mg/l)[4]. Therefore, the determination of plasma CRP concentration helps in deciding whether to initiate antibiotic treatment[1]. Successful antibiotic therapy then results in a rapid decrease in CRP, whereas an increase persists when treatment is unsuccessful.

Determination of CRP can reveal the risk of **postoperative infection**. On the third day after surgery, its concentration should rapidly decrease to normal. A persistent increase or only a partial decrease, followed by a further increase, indicates the presence of infection or other inflammatory complications.

A slight rise in CRP also accompanies *myocardial infarction*. In general, slightly elevated CRP levels (usually around 10 mg/l) are a sign of high cardiovascular risk[5]. Monitoring CRP concentrations are also useful in monitoring **autoimmune diseases**[6].

The disadvantage of CRP is its **low specificity**. Unlike procalcitonin, it does not inform about the severity of organ involvement, but only about the presence of infection. The two markers are not substitutes for each other but complementary.

References

Related articles

- Procalcitonin
- Blood ■ Blood plasma ■ Blood count ■ Blood sampling for testing ■ Biochemical analysis of blood ■ Laboratory acid-base balance testing ■ Hemoculture ■ Hemocoagulation ■ Blood coagulation testing ■ Bleeding disorders testing ■ Erythrocyte sedimentation rate

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