كلية المستقبل الجامعة/ قسم التحليلات المرضية

المرحلة الرابعة / المحاظرة الثانية

C-Reactive Protein (CRP)

C-Reactive Protein (CRP), was the first acute phase protein in inflammatory reactions. CRP is required for the activation of complement system. After an inflammatory stimulus, a significant rise in CRP may be detected in the serum within 6 hours. As such, CRP was for many years thought of as a sensitive, CRP also has an anti-inflammatory role in autoimmune diseases such as systemic lupus erythematosus (SLE)

Clinical Indication:

CRP production is part of the nonspecific acute-phase response to inflammation, infection, and tissue damage. CRP values are non specific and can never be diagnostic on their own, but can contribute to the evaluation of the inflammatory response, Furthermore, since trace element levels in the serum may change during inflammation, CRP levels used for evaluation of the an on-going inflammatory response. The acute phase response develops in a wide range of acute and chronic inflammatory conditions like bacterial, viral, or fungal infections; rheumatic and other inflammatory diseases; malignancy; and tissue injury or necrosis. These conditions cause release of interleukin-6 and other cytokines that trigger the synthesis of CRP and fibrinogen by the liver

PRINCIPLE

The CRP-latex particles are coated with antibodies to human CRP. The CRP-latex Reagent has been standardised to detect serum CRP levels at or above 6 mg/L which is considered the lowest concentration of clinical significance. When the latex suspension is mixed with serum containing elevated CRP levels on a slide, clear agglutination is seen within 2 minutes.The presence or absence of a visible agglutination indicates the presence or absence of CRP in the specimen.

REAGENTS

-- Reusable agglutination slide and disposable stirring pipettes.

Vial R1 **CRP-Latex** Suspension of polystyrene latex particles coated with anti-CRP antibodies (goat origin).

Vial R2 **Positive Control (**Human serum containing CRP.

Vial R3 **Negative Control (**Human serum free of CRP).

SPECIMEN :

Use fresh serum obtained by centrifugation of clotted blood.

PROCEDURE (QUALITATIVE METHOD)

1-Allow each component to reach room temperature before use.

2.Place one drop of the Negative CRP Control onto a circle of the agglutination slide.

3- Place one drop of the Positive CRP Control onto an adjacent circle of the agglutination slide.

4- Using the pipette-stirrers provided, place one drop of serum specimen(s) onto the remaining circle(s) of the agglutination slide.

5- Shake gently and re-suspend the CRP latex reagent.

6- Add one drop next to each drop of controls and serum on the agglutination slide.

7- Stir with individual pipette-stirrers and spread mixture over entire area of the test circle.

8- Gently rock the agglutination test slide for two minutes and observe the test circles for agglutination. Interpret results at two minutes.

9- At the end of the test rinse the slide with distilled water and dry on air.

SEMI-QUANTITATIVE DETERMINATION

The semi-quantitative test can be performed in the same way as the qualitative test using dilutions of the specimen in saline as follows:

Dilutions	1/2	1/4	1/8	1/16
Saline	50 µL	50 µL	50 µL	50 µL
Specimen	50 µL	-	-	-
	→	50µL →	50 µL →	50µL
Transfer onto a circle of a test slide :				
Diluted Specimen	50 µL	50 µL	50 µL	50 µL
Reagent (vial R1)	50 µL	50 µL	50 µL	50 µL
Calculate the result as follows :				
6 x Nº of dilution	6 x 2	6 x 4	6 x 8	6 x 16
Results : mg/L	12	24	48	96


CRP-LATEX
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