

ESR CRP

Overview

Erythrocyte sedimentation rate (Sed rate, ESR) and C reactive protein (CRP) are tools to measure inflammation. They are used in infectious, autoimmune disease but can also be elevated in malignancy and spuriously for other medical reasons.

Spurious = not being what it purports to be; false or fake.: "separating authentic and spurious claims".

The classic inflammatory disease associated with ESR and CRP is giant cell arteritis.

Giant cell arteritis = vasculitis involving cranial arteries.

Normal ESR elevates with age but in general normal range is 0 to 20 mm per hour. Note the unit is different than in most tests. It is a distance over time. That is because ESR is measured by measuring the amount of time it takes for a red blood cell to migrate from the top to bottom of a capillary tube. [2]

Test Details

Blood is placed into a tall thin tube and the test measures the rate of fall (sedimentation) of erythrocytes (red blood cells). The red cells settle faster than normally if there is alteration of blood proteins, which indicates inflammation.[1]

Results

The average ESR in giant cell arteritis is 70.

ESR in disease

Disease	Avg ESR (mm/hr)
Normal	0-20
Giant cell arteritis	75
Polymyalgia rheumatica	50
Malignancy	>100

ESR/CRP in RA

% active RA patients

ESR	CRP	
40	Elevated	Elevated
25	Elevated	Normal
25	Normal	Elevated
10	Normal	Normal

Questions: Is there a known range of sed rate and CRP in the

population? Does obesity or other factors besides disease affect a "normal" sed and CRP? If treatment with steroid reduces ESR CRP, does that prove a patient has inflammatory disease? What is normal ESR and CRP in a dialysis patient?

CRP vs ESR

CRP reacts quicker than ESR. So, if wanting to measure response to a treatment in days rather than weeks, CRP might work better than ESR.

ESR and CRP will typically correlate and be close to equal but in general the CRP is lower than ESR. So, a typical active RA patient ESR = 40 and CRP=30. So, $\frac{3}{4}$ is the right adjustment or equilibrator.

References

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[1] Sed Rate (Erythrocyte Sedimentation Rate or ESR) Test. Cleveland Clinic

[2] C Eustice. Erythrocyte Sedimentation Rate (Sed Rate) Overview. VeryWell Health Verywell Health