



News & Views

The Scoop

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C-R eactive Protein

Microdubmin

C-Reactive Protein (CRP)

C-reactive protein, what is it and is the insurance industry ready to embrace this inflammation (or inflammatory) marker as a routine blood test?

Background



This marker has received considerable media attention with most of the discussion lead by a Dr. Paul Ridker, cardiologist at the Brigham and Women's Hospital in Boston. He is considered a world leader on arterial inflammation and immune-system reaction being a contributor to stroke and heart attack. The primary reason for the research was prompted by a study completed by the National Institute of Health reporting that 50% of men and 63% of women who died suddenly from coronary disease had no prior symptoms of heart disease. This unexplained phenomena prompted researchers to try to locate markers that would identify individuals who were at risk of a coronary event even though they had no other contributing risk factors.

Dr. Ridker, in the New England Journal of Medicine, references a study conducted on 27, 939 women suffering from heart disease. Of these women more than half had cholesterol levels considered low, by current treatment guidelines, however, had elevated CRP. This research resulted in a number of cardiologists drawing the conclusion that low grade inflammation within the body is the fundamental contributing cause of cardiovascular disease, as it leads to the weakening and rupture of the arterial plaques resulting in heart attacks and strokes.

What It Is

C-reactive protein is made by the liver when arteries become inflamed. Levels of CRP appear to increase in response to inflammation. Normal levels are generally less than 5 mg/dl of blood. But within 4 to 8 hours after the onset of some type of inflammatory event, levels of CRP can rise from 20 to 500 mg/dl. Elevated levels of CRP can also be an indication of rheumatoid arthritis, rheumatic fever, cancer, tuberculosis, pneumonia, or systemic lupus erthematosus. The use of CRP for the underwriter can be a real dilemma. As mentioned above, CRP can be related to Coronary Risk, but can be related to a number of other conditions as well, including acute infections. Accordingly, if CRP is measured close to a specific acute infection, it is difficult to determine how seriously to treat the result.

Physicians who use CRP have the luxury of repeat testing and patient follow up. By contrast, the insurance industry must, for the most part, make a decision based on the result at hand. So, while the presence of significant risk factors combined with an elevated CRP might lead an underwriter to take harsh action, what does the underwriter do with a person who is normal in every respect other than a high CRP result? Furthermore, since CRP is clearly not 100% specific to Coronary Risk, then any underwriting action would be debatable in the event of a challenge.



It is important to note it is not the CRP level by itself that is thought to be the problem, but the presumed inflammation in the coronary arteries that is reflected in the elevation. Furthermore there is no specific medical treatment for an elevation other than to advise the patient to lower the obvious current coronary risk factors present. Currently there is intense debate as to whether this assay should be used by the medical community as a universal screen. To date it has not been placed on the same footing as cholesterol and blood pressure. There seems to be some thought that if a patient had moderately high blood pressure, cholesterol and other factors this test might be used to determine treatment. In other words, an abnormal blood pressure by itself may not require treatment but the combination of high blood pressure and elevated CRP may lead to treatment. In this situation even if the marker is not 100% specific it might be just good medicine to start the treatment early. It would appear physicians who are currently requesting this test are doing so to identify and motivate patients with the worst multiple risk factors.

In summary, research and study results released to date show a strong correlation with coronary disease. However, is CRP a marker or a risk factor? That question has not been answered within the medical community and many believe that, while CRP is a great start, there is still a considerable amount of research needed for us to fully understand the inflammatory process and coronary artery disease.

While we have the capability to do this test at CRL, we think it is important for you to consider what action you would take based on the results. At this time, we are not suggesting you test for CRP on a routine basis. However, it may be helpful on applicants with borderline and/or multiple risk factors.

The choice is yours. We will continue to conduct and monitor future research studies and will update you accordingly as to our finding.

Microalbuminuria

North Americans are notoriously bad eaters, The evidence is overwhelming. Nearly 66% of all adults are overweight and over 30% are clearly obese. The result of such poor nutritional habits is that nearly 16 million Americans (6% of the U.S. population) are now diabetic. Of these, 5.4 million are undiagnosed.

It's certainly no surprise that the increasing numbers of Americans now overweight has led to diabetes and hypertension being a major factor in the increase of kidney disease this country. If this phenomena continues at the current rate, the impact on future mortality will likely be dramatic.

To date, it's clear our society doesn't get it. While many overweight and obese Americans do not believe they are at serious risk for Type 2 diabetes, the CDC is reporting the incidence of diabetes has jumped nearly 50% in the past 10 years.

Diabetes is the single leading cause of kidney failure in the U.S. Each year, nearly 25,000 people with diabetes develop kidney failure. 30% of Type I diabetics and up to 40% of those with Type II will eventually have kidney failure. What impact will this have on future mortality if the growth continues at this rate? What additional risks are we missing without proper

lab testing, given the increasing undiagnosed number within the general population

For the most part, early stages of this disease can be frequently missed without the use of microalbumin analysis. It is important to recognize that the urinary microalbumin test is an immunoassay that is at least 30 times more sensitive than a standard urine protein assay. It is the earliest available indicator for the development of diabetic complications and can point to diabetic nephropathy, cardiovascular disease and hypertension. Diabetic complications can be determined by elevated microalbuminuria 5 to 10 years earlier than by total urine protein.

As we look into the future it is clear that we North Americans live in a world of fast food resulting in a significant increase in diabetes, cardiovascular complications and kidney disease. All of these conditions are clearly interrelated and all should be triggers for obtaining microalbumin testing. Early detection of kidney disease is an important factor in predicting those who are already demonstrating the complication of their disease process.

The importance of this test as a reflex test cannot be overstated in light of the growth in obesity, diabetes, and cardiovascular complications.

Do your reflex testing limits reflect these current trends?