



## ASK DR. BOB . . .

*with Dr. Bob Frank*

### **C-REACTIVE PROTEIN**

**Should your client have the CRP test? This is a question being asked much more frequently by patients to their family physicians. When it is performed and available to our underwriters as part of an attending physician's statement, it then presents a new piece of information regarding the individual's cardiac risk profile. The whole concept of CRP as a marker for coronary artery disease is based upon the new paradigm for coronary artery disease, which has been discussed in past FYI articles. This paradigm states that coronary artery disease is an inflammatory condition, and markers of inflammation may be helpful in assessing an individual's risk.**

Since inflammatory processes are now recognized as playing a central role in the development of atherosclerosis, there has been much research into various markers of inflammation and their predictive value. Numerous markers have been studied, including interleukin 6, serum fibrinogen levels, homocysteine, and soluble intracellular adhesion molecule 1 (SICAM 1), but perhaps the most widely studied is that of C-reactive protein (CRP). CRP as a clinical test has been present for many years, being used as a marker of gross inflammatory conditions. Newer diagnostic laboratory methods were developed that could measure

extremely small amounts of CRP. Thus, researchers began studying the high sensitivity CRP assay from the standpoint of cardiovascular disease.

CRP has been compared not only to other inflammatory markers, but to other standard risk factors such as cholesterol. In many of these studies, CRP has been found to be a better predictor for coronary artery disease risk than homocysteine, total cholesterol, LDL cholesterol, and HDL/total cholesterol ratio. The media has picked up on this, and numerous articles have been published in the lay press. Being a simple blood test that is not expensive has added to its popularity. CRP values have been found to be independent of age, smoking status, cholesterol levels, blood pressure, and even diabetes. Interestingly, moderate alcohol consumption has been found to be associated with lower CRP levels.

The higher the CRP level, the greater the risk. In assessing the risk, it is easiest to divide the CRP levels into three general categories of prognosis. Levels less than 1mg/l are at the low risk for heart disease, levels 1-3mg/l are at intermediate risk, and individuals with greater than 3mg/l are the highest risk. Individuals in the high-risk category have a twofold increase in risk for coronary artery disease compared to the low-risk group.

Although CRP is gaining in popularity, there is still a great deal of debate within the medical community regarding how to most effectively utilize this test. Recently, the American Heart Association recommended measuring CRP as an acceptable test, although it stopped short of recommending it as a routine screening test for the entire adult population. However, the American College of Cardiology has not jumped on the bandwagon, stating that more study is necessary before it can recommend the test. Perhaps the greatest utility of CRP would be in those who are felt to be at intermediate risk for coronary artery

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disease and the physician is questioning how aggressive should he be in treating such a patient. In this individual, if the CRP is in the highest triad then perhaps medication may be appropriate. If the CRP was in the lowest third, treatment could be safely withheld. Interestingly, the statin drugs used to lower cholesterol also lower CRP levels, so the value of these drugs may lie beyond their actual cholesterol lowering affects.

As more physicians are ordering the CRP test, the underwriters at Union Central are being faced with what to do with this piece of information in the underwriting process. Although there is a lot of data regarding CRP and the risk for coronary artery disease, there is a paucity of information of how to

relate this to what rating should be given to an applicant. I have recommended to the underwriters that an elevated CRP should be looked at the same as you would evaluate an elevation of any other more traditional risk factors, such as cholesterol or homocysteine. It must also be considered within the scope of the whole applicant and his overall cardiac risk profile. For individuals with levels greater than 3mg/l, it would be appropriate to apply some debits to their rating. Hopefully, as more studies are published in the future, it may become clearer how to properly underwrite elevated CRP levels.

As usual, I am happy to discuss this information with any of our field associates. I can be reached at ext. 2641.