

CONTENTS

Web Exclusive: It's Not Just Cancer

BY KAREN PATTERSON

The ranks of diseases that are linked to chronic inflammation are swelling. Not only can a chronic inflammatory condition promote cancer, but it can play a role in a host of conditions including obesity, diabetes, and the nation's No. 1 killer, cardiovascular disease.

"It's now clear that in cardiovascular disease, when you have plaque formation in an artery, there's also some aspects of inflammation there," says Raymond DuBois, MD, PhD, of M.D. Anderson Cancer Center.

One potential cause of chronic inflammation related to heart disease is infection: Some evidence indicates, for instance, that a bacterium known as *Chlamydia pneumoniae* may be important in inflammation and the initiation of arterial plaque buildup.

The presence of a particular inflammation-related protein, known as C-reactive protein, or CRP, increases during inflammation that is systemic, or present throughout the body and in the bloodstream. Known cardiovascular risk factors such as smoking or high blood pressure can help open biochemical doorways to that inflammatory process.

The higher people's levels of CRP, as determined by a test called highly sensitive C-reactive protein blood test (hs-CRP), the higher their risk of heart attack, studies have found. High levels of CRP also can consistently predict further heart problems in patients with unstable angina or a previous heart attack. Elevated levels appear to predict whether an artery opened by balloon angioplasty will reclose, and can help gauge risk for stroke patients of further related problems, research has found.

CRP may prove itself revealing in predicting cancer outcomes as well. A recent study by scientists at the Fred Hutchinson Cancer Research Center in Seattle found that elevated levels of CRP, as well as another chronic inflammation marker in the blood, serum amyloid A, were associated with reduced overall survival in a group of 734 breast cancer patients. That study was published in May in the *Journal of Clinical Oncology*.

Chronic inflammation has been implicated in many other conditions, as varied as rheumatoid arthritis, chronic obstructive pulmonary disease, periodontal disease, rosacea, and even depression. Aspects of inflammation also are relevant to obesity and the diseases that accompany that condition, including diabetes, DuBois says. "When someone has a high body mass index there are a lot of inflammatory mediators and cytokines that are circulating in the blood that undoubtedly are playing a role in some of the associated diseases that occur in

[obese] people,” he says.