Antibodies May Underlie Lipid Profiles in SLE

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Contributing Writer

BOSTON — Heightened activity of anti–double-stranded DNA antibodies may contribute to the poor cholesterol profiles of patients with active systemic lupus erythematosus, according to study findings.

Patients with SLE are often afflicted with a complex triad of risk factors involving high levels of serum triglycerides, high levels of VLDL cholesterol, and low levels of HDL cholesterol. These can hasten the development of premature atherosclerosis and coronary artery disease. Though researchers have posited several theories to explain this phenomenon, its etiology remains unknown.

Sara Kashef, M.D., and colleagues from the Shiraz University of Medical Sciences in Fars, Iran, compared serum lipoprotein levels and antibody activity in 30 patients with active lupus with that of 16 patients with inactive lupus, and 41 healthy controls matched for age and sex. Lupus activity was measured using the SLE disease activity index (SLEDAI). Dr. Kashef presented the study in a poster session at the annual meeting of the Federation of Clinical Immunology Societies.

Compared with healthy controls and people with inactive SLE, patients with active SLE had significantly higher levels of triglycerides and VLDL cholesterol, and lower levels of HDL cholesterol.

Moreover, poor cholesterol profiles were significantly more likely to appear in patients who tested positive for anti-ds-DNA antibodies than in those who tested negative. There was no correlation between dyslipoproteinemia and anticardiolipin antibody activity, another suspect in the genesis of SLE atherosclerosis.

"The appearance of this pattern of dyslipoproteinemia—high triglycerides and VLDL cholesterol and low HDL cholesterol—in this selected group of patients

seems to be a consequence of disease activity and SLE disease itself," according to the authors. "Titers of anti-dsDNA correlated significantly with increased SLEDAI scores and low HDL cholesterol," they noted.

Recent research suggests that the enzyme, lipoprotein lipase (LPL), may play a key role. LPL breaks down VLDL cholesterol. And when LPL is impaired, VLDL cholesterol proliferates, leading to an unhealthy duet of high triglycerides with low HDL cholesterol, the investigators explained.

Although antibodies to LPL were not measured, previous research suggests that increases in such antibodies are common in SLE patients (Arthritis Rheum. 2002;46:2957-63).

"These results reflect that one of the contributory causes of dyslipoproteinemia in active SLE is probably increased cross-reactivity of anti-dsDNA antibodies with LPL due to high production of these antibodies in the active phase of disease," the investigators suggested.

Although these findings support an underlying autoimmune cause of dyslipoproteinemia in lupus patients with active disease, other factors likely contribute as well, the researchers said. These include inflammatory mediators (e.g., tumor necrosis factor, interleukin, interferon) that are known to suppress LPL activity and cause dyslipoproteinemia in SLE (Arthritis Rheum. 2003;48:2533-40), as well as physical inactivity. ■

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'To say that "you better meet every single one of these principles and guidelines," that's digging in your heels—and tying your hands.'

Dr. Mary Frank, president of the American Academy of Family Physicians, expressing doubt about the AMA's tactics on 'pay for performance,' p. 26