Systemic sclerosis complications more severe in African Americans than Caucasians

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African Americans have more severe complications from systemic sclerosis, also known as scleroderma, than Caucasians. Findings published today in, *Arthritis & Rheumatism*, a journal of the American College of Rheumatology (ACR), show that compared with Caucasians, African-American patients were more likely to have antibodies that increased frequency and severity of pulmonary fibrosis, which is associated with decreased survival.

According to the ACR there are 49,000 adult American diagnosed with systemic sclerosis—an autoimmune disease where collagen build-ups in the skin and organs, causing the skin to harden, joint pain, breathing issues, and digestive problems. Medical evidence has confirmed that African Americans have an increased incidence and worse prognosis with systemic sclerosis than Caucasians. Previous research has shown that genetic differences among the races contribute to differences in auto-antibodies, which influence how the disease affects patients.

To understand how auto-antibodies affect systemic sclerosis in African-American and Caucasian patients, a research team led by Dr. Virginia Steen from Georgetown University Medical Center in Washington, DC, analyzed data from the Pittsburgh Scleroderma Database. This database includes demographic, clinical, autoantibody, organ involvement and survival information for 203 African-American and 2945 Caucasian scleroderma patients seen at the University of Pittsburgh Medical Center between 1972 and 2007.

Findings show that African Americans had higher frequencies of certain scleroderma-specific autoantibodies compared to Caucasians: anti-U3-RNP (40% vs. 2%), U1-RNP (16% vs. 7%) and anti-topoisomerase (27% vs. 21%). Anti-topoisomerase auto-antibodies in scleroderma are associated with a higher incidence of pulmonary fibrosis (scarring of the lungs) and greater disease severity, and in this study, African-American patients with this antibody had more frequent and more severe fibrosis than the Caucasians with this antibody. Pulmonary fibrosis was also more severe in African American patients with anti-U1 RNP auto-antibodies compared to Caucasian patients with this antibody but a difference in survival between the races was not apparent. Researchers determined that the auto-antibody anti-U3 RNP was linked to more severe gastrointestinal involvement in African Americans compared to Caucasians.

Pulmonary disease is the most common cause of scleroderma related deaths, and African-American race was independently associated with pulmonary fibrosis and African Americans are at greater risk for severe lung disease, which the authors suggest may be due to genetics or environmental factors. "Our findings confirm that more serious complications affect African Americans with system sclerosis than Caucasians," concludes Dr. Steen. "For African-American systemic sclerosis patients with severe lung disease, more aggressive treatment early on could improve their outcome."

More information: "A Clinical and Serologic Comparison of African American and Caucasian Patients with Systemic Sclerosis." Virginia Steen, Robyn T. Domsic, Mary Lucas, Noreen Fertig, Thomas A. Medsger, Jr. *Arthritis & Rheumatism*; Published Online: May 10, 2012 (DOI: 10.1002/art.34482).