Biomarker identified in systemic sclerosis predicts progression

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(HealthDay)—Patients with systemic sclerosis have elevated levels of CXCL4, which predicts disease risk and progression, according to a study published online Dec. 18 in the *New England Journal of Medicine*.

Lenny van Bon, M.D., from the Boston University School of Medicine, and colleagues performed proteome-wide analysis using isolated plasmacytoid dendritic cells from healthy individuals and from patients with systemic sclerosis with distinct clinical phenotypes. The findings were validated in five large cohorts of patients with systemic sclerosis, and were compared with those for patients with systemic lupus erythematosus, ankylosing spondylitis, and hepatic fibrosis.

The researchers found that, in systemic sclerosis, the predominant protein secreted by plasmacytoid dendritic cells in circulation and in skin was CXCL4, with a mean level of 25,624 pg/mL, which was significantly higher than that found in controls (92.5 pg/mL) or in patients with systemic lupus erythematosus (1,346 pg/mL), ankylosing spondylitis (1,368 pg/mL), or liver fibrosis (1,668 pg/mL). There was a correlation between CXCL4 levels and skin and lung fibrosis and pulmonary arterial hypertension. Of the chemokines, only CXCL4 predicted systemic sclerosis risk and progression. CXCL4 induced inflammatory cell influx and skin transcriptome changes in vivo.

"Levels of CXCL4 were elevated in patients with systemic sclerosis and correlated with the presence and progression of complications, such as lung fibrosis and pulmonary arterial hypertension," the authors write.

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