Modified heat shock protein identified as plasma cell dyscrasis risk factor

December 8 2014

Patients with plasma cell dyscrasis have high amounts of an abnormal immunoglobulin, called a paraprotein, in their blood. While many patients have no outward symptoms, paraproteins can impair immune function, thicken blood, and damage organs. Plasma cell dyscrasis may be inherited, but risk factors for this disease are poorly understood.

A new study in the *Journal of Clinical Investigation* suggests that the presence of a modified host protein is associated with plasma cell dyscrasis risk. Michael Pfreundschuh and colleagues evaluated paraproteins in blood from patients with a variety of syndromes associated with plasma cell dyscrasis. A proportion of patients with plasma cell dyscrasis produced a paraprotein that specifically targets a modified version of a heat shock protein, HSP90.

These patients all generated a modified form of HSP90, which was the result of a heritable mutation that resulted in the inability to remove a modification known as SUMO from HSP90.

The results of this study indicate that individuals with high levels of SUMO-modified HSP are at increased risk of developing plasma cell dyscrasis diseases such as multiple myeloma.

More information: Sumoylated HSP90 is a dominantly inherited plasma cell dyscrasias risk factor, *J Clin Invest*. DOI: 10.1172/JCI76802