An autoimmune response may contribute to hypertension

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High blood pressure is a major risk factor for heart attack, stroke, chronic heart failure, and kidney disease. Inflammation is thought to promote the development of high blood pressure, though it is not clear what triggers inflammatory pathways in hypertension.

A new study in the *Journal of Clinical Investigation* suggests that an autoimmune response leads to the development high blood pressure. Using mouse models, David Harrison and colleagues at Vanderbilt University showed that compounds that stimulate hypertension result in the faulty production of modified proteins in dendritic cells.

These modified proteins, called isoketals, were presented as antigens by dendritic cells, inducing an immune response to the body's own proteins.

Administration of compounds that scavenge isoketals reduced blood pressure in murine models of hypertension. Moreover, serum from patients with treatment-resistant hypertension contained elevated levels of an isoketal marker.

This study supports the idea that hypertension is an autoimmune disease and suggests that reducing this response may be a potential strategy to treat hypertension.

More information: DC isoketal-modified proteins activate T cells and promote hypertension, *J Clin Invest*. DOI: 10.1172/JCI74084

Commentary: Is hypertension an autoimmune disease? *J Clin Invest.* DOI: 10.1172/JCI77766