



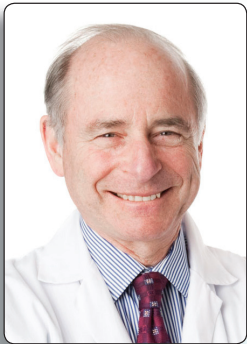
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PAPER OF THE MONTH • JUNE 2017



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Circulation

Gamma Delta T Cells Mediate Angiotensin II-Induced Hypertension and Vascular Injury

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This paper advances understanding of how hypertension, and the ensuing vascular damage, develops by exploring the role of the immune response. It earned a highlight in *Nature Reviews Nephrology*.

The investigators set out to test the hypothesis that gamma delta T lymphocytes play a key role in the development of hypertension, vascular injury, and inflammation. These T cells, which account for only 1 to 4% of circulating lymphocytes, are unconventional T lymphocytes in that they have a potential to bridge the innate and the adaptive immune system. They might help us to understand some of the mechanisms by which the immune system is triggered to initiate blood pressure elevation, and to sustaining it, which characterizes hypertension.

Having demonstrated that T cells are critical to blood pressure response to angiotensin II in an animal model, Dr. Schiffrin sought translational evidence in humans. Looking at whole blood TCR constant region gene expression levels from 206 patients with a full range of blood pressures, he found 12% of variance in blood pressure is explained by gamma delta T cells, once correction for age and sex was factored into the equation, which is very significant for a small population of cells. This demonstrates a correlation between what was found in the animal model and humans. Thus, the finding represents an important breakthrough that promises to be useful both diagnostically and therapeutically.

DOI: <https://doi.org/10.1161/CIRCULATIONAHA.116.027058>