MedicalXpress

Down regulation of microRNA-155 may underlie age-related hypertension

September 8 2016

Hypertension and cardiac disease are common consequences of aging. Unfortunately, many elderly individuals do not respond to current therapies for reducing blood pressure, and the factors that drive age-related hypertension are poorly understood.

In this issue of *JCI Insight*, researchers led by Iris Jaffe of Tufts Medical Center provide evidence that age-related reductions of a microRNA (miR-155) underlie age-associated hypertension. Mice that lack mineralocorticoid receptors in smooth muscle cells, which regulate blood pressure, are protected from developing high blood pressure as they age.

Jaffe and colleagues determined that compared to aged wild type mice, aged animals lacking mineralocorticoid receptors have elevated levels of miR-155, less oxidative stress, and fewer hypertensive characteristics. Moreover, restoration of miR-155 in aged wild type mice improved blood pressure parameters.

Importantly, in a small cohort of healthy older adults treated with a mineralocorticoid receptor inhibitor, reduced levels of miR-155 were associated with beneficial changes in blood pressure. Together, these results indicate that miR-155 should be further explored as a biomarker and therapeutic target for age-related hypertension.

More information: Jennifer J. DuPont et al, Vascular mineralocorticoid receptor regulates microRNA-155 to promote vasoconstriction and rising blood pressure with aging, *JCI Insight* (2016).

DOI: 10.1172/jci.insight.88942