Could mutant gene in chickens lead to hypertension cure?

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Scientists from the University of Abertay Dundee have discovered that a gene which, when severely mutated, causes blindness and kidney abnormalities in chickens, is the same as one that predisposes humans to hypertension.

Often referred to as the 'silent killer' due to the lack of symptoms, hypertension affects one in three adults in the UK (16 million) and poor management of the condition is thought to account for approximately 62,000 unnecessary deaths from stroke and heart attacks each year.

Although diet and exercise play a crucial part in the prevention and management of hypertension, there is no 'cure' and it is acknowledged some people are more predisposed to it than others, regardless of their

lifestyle.

Doctor Doug Lester from Abertay's School of Contemporary Sciences said: "This discovery could lead to the development of new drugs for hypertension in humans who are genetically predisposed to the condition."

The Abertay scientists, working with researchers from the Roslin Institute, Leeds University and Ninewells Hospital in Dundee, have discovered that the mutated GNB3 gene can also cause kidney abnormalities that have not previously been seen in humans.

"As half of all humans carry a common GNB3 variant that predisposes them to hypertension, this finding should shed light on what kidney functions are being changed in these individuals." Doctor Lester said.

Research Fellow Doctor Hemanth Tummala who worked alongside Doctor Lester said: "We believe this paper can shed light on the kidney pathways in which GNB3 protein is involved in predisposing humans to hypertension. This is because a severe mutation in the GNB3 gene, in chickens causes not only blindness, as previously reported, but also renal anomalies.

"More importantly, in humans, another common GNB3 variant that half of all humans carry has been associated with predisposing carriers to essential hypertension.

"We propose that these chickens are useful animal models in studying the action of the GNB3 protein in the kidney and why the common human variant predisposes individuals to hypertension."

More information: Doctor Lester and Doctor Tummala's paper published this week in *PLoS ONE*, can be found at bit.ly/oqZV1F