

# Test can identify patients with hypertension at higher risk of death

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(Medical Xpress) -- An inexpensive and routinely performed blood test could help identify patients with high blood pressure who are at increased risk of dying from the condition.

Scientists at the University of Glasgow have found that one of the parameters in the routine full blood count – the volume percentage of red blood cells in blood known as haematocrit (hct) – is an independent biomarker for early death in [patients](#) with [high blood pressure](#).

While high haematocrit has been known to be associated with [increased risk](#) of thrombosis, the threshold level for action is usually when it exceeds very high levels of over 55%.

Laura Paul, a University of Glasgow medical student, and a team of researchers analysed data on 10,951 hypertensive patients in the Glasgow [Blood Pressure](#) Clinic and found that, even within the normal range of haematocrit, risk of early death increased at both the upper and lower end of haematocrit levels.

They identified the haematocrit range with the lowest risk as between 42% and 44% in men and between 38% and 40% in women. Moreover, they found that haematocrit measured at the patients' first clinic visit predicted future blood pressure levels – those with higher haematocrit at the first visit tend to have higher blood pressure over a 10-year follow-up period.

Hypertension is the most common preventable cause of premature death in the UK affecting over a quarter of adults – and over half of those over 60 years of age. Although current management guidelines focus on getting blood pressure down to a specific target, the risk associated with increasing blood pressure is continuous, with each 2 mmHg rise in systolic blood pressure associated with a 7% increased risk of mortality from ischaemic heart disease and a 10% increased risk of mortality from stroke.

The Glasgow Blood Pressure clinic at the Western Infirmary in Glasgow is one of the largest and the longest running blood pressure clinics in the world. Over 16,000 patients have been managed at this clinic since 1968 and the clinical database is now providing valuable insights into predictors of risk that will benefit hypertensive patients everywhere.

Dr. Sandosh Padmanabhan, Reader in the Institute of Cardiovascular and Medical Sciences, who led the study said: “Finding new biomarkers that predict disease or risk is the Holy Grail for medical researchers.

“This study shows that there is valuable predictive information that can be obtained from blood tests that are routinely performed in out-patient clinics and primary care. Haematocrit, for example, is very useful in assessment and management of hospital in-patients who are very sick, but we show that this parameter can also be useful in predicting risk in out-patient and primary care settings.

“While haematocrit is routinely reported as part of a full blood count, it is not routinely examined in office clinical practice. What we have shown is that, in patients with hypertension, haematocrit levels outwith the gender-specific optimal ranges identified in this study should be targeted for more aggressive blood pressure and cardiovascular risk reduction treatment.”

The research ‘Hematocrit predicts long-term mortality in a non-linear and sex-specific manner in hypertensive adults’ is published in the journal *Hypertension*.

Provided by University of Glasgow

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