Facing the chill wind of blood pressure

May 22 2013

(Medical Xpress)—High blood pressure is something that has traditionally been a problem in Scotland, but might there be a link to our climate?

A new study has found that some people's blood pressure is affected more by the cold weather and this blood pressure sensitivity to temperature may be a marker of early mortality.

Sandosh Padmanabhan, Reader at the Institute of Cardiovascular and Medical Sciences at the University of Glasgow said: "This is a unique study as it shows that response to weather – and particularly temperature – can be reflected in blood pressure and is specific to the individual."

The study involved assessing over 169,000 blood pressure measurements in 16,010 patients who attended the Glasgow Blood Pressure Clinic between 1970 and 2011. Each patient's blood pressure measured at every clinic visit was mapped to prevailing weather conditions in the area on that day and the response of blood pressure to weather determined.

The team found that on average the blood pressure of an individual drops 2% each year if weather is similar on the two visits. However, if the temperature between consecutive visits fell from the highest quartile to the lowest quartile, then the patients' blood pressure rose by 2.1%. The same was true for a reduction in sunshine, showing a 2.3% increase. Increases in air-frost and rainfall from the bottom to top quartiles were associated with 1.4% and 0.8% rises respectively in blood pressure. Patients differed in their response to weather, with temperature-sensitive

patients showing worse blood pressure control during follow-up and a 35% increased risk of long-term mortality compared to the temperature non-sensitive patients.

Sandosh Padmanabhan said "This is the first study to show the effect of different weather parameters on blood pressure measurements. Knowing a patient's blood pressure response to weather can help reduce unnecessary antihypertensive treatment modification and identify temperature sensitive individuals who are at higher risk for further risk reduction measures."

More information: hyper.ahajournals.org/content/ … A.111.00686.full.pdf

Provided by University of Glasgow