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## Plasma Lipocalin-2 Concentration is Related to Blood Pressure and is Increased in Hypertension

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**Introduction:** Lipocalin-2 is secreted by adipocytes and is upregulated in obesity. As obesity is known to be a cause of hypertension, we investigated whether the plasma level of lipocalin-2 is related to blood pressure and hypertension.

**Methods:** The plasma concentration of lipocalin-2 was measured by immunoassay in 1925 subjects of the Hong Kong Cardiovascular Risk Factor Prevalence Study (CRISPS). Blood pressure was measured after prolonged resting by a trained nurse manually using a calibrated sphygmomanometer three times at 5 minute intervals.

**Results:** Plasma lipocalin-2 level was higher in men than in women (median [IQR] 37.7 [30.5-47.9] vs. 31.6 [25.4-40.4],  $p < 0.001$ ). It was significantly related to age ( $r = 0.15$ ,  $p < 0.001$ ) and systolic blood pressure ( $r = 0.15$ ,  $p < 0.001$ ). In women but not in men, it was also significantly related to waist circumference ( $r = 0.16$ ,  $p < 0.001$ ), BMI ( $r = 0.09$ ,  $p = 0.004$ ), diastolic blood pressure ( $r = 0.14$ ,  $p < 0.001$ ) and fasting plasma glucose ( $r = 0.089$ ,  $p = 0.004$ ). Plasma lipocalin-2 level was significantly higher ( $p < 0.001$  adjusted for age) in hypertensive men and women (median [IQR] 41.1 [31.7-53.0]; 36.5 [27.5-50.1]) compared to normotensive men and women (36.9 [29.6-45.6]; 30.9 [25.2-38.3]).

**Conclusion:** Plasma lipocalin-2 concentration is related to systolic blood pressure, and is higher in men and in people with hypertension. Lipocalin-2 may be involved in the pathogenesis of hypertension.

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