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ASSOCIATION OF HAEMOGLOBIN WITH AMBULATORY ARTERIAL STIFFNESS INDEX IN UNTREATED ESSENTIAL HYPERTENSIVE PATIENTS WITHOUT ANAEMIA

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Objective Increased haemoglobin (Hb) levels are known to be associated with increased cardiovascular events and mortality in hypertensive patients, but the underlying mechanism remains unclear. Meanwhile, increased Ambulatory Arterial Stiffness Index (AASI), the surrogate maker of arterial stiffness, has been proved to be an independent predictor of cardiovascular disease. This pilot study evaluated the association between Hb and AASI in untreated essential hypertensive patients without anaemia.

Methods A total of 566 untreated essential hypertensive patients without anaemia were divided into normal-Hb and high-Hb groups according to their Hb levels. The AASI and its symmetric calculation (sym_AASI) were derived from 24 h-Ambulatory Blood Pressure Monitoring (24 h-ABPM). A multivariable linear regression analysis was performed to determine the relationship between Hb and AASI, Sym_AASI.

Results High-Hb group (n=127) showed higher AASI and Sym_AASI (0.51±0.11 vs 0.43±0.12, p<0.001; 0.33±0.10 vs 0.27±0.08, p<0.001) compared to normal-Hb group (n=439). Univariate correlation analysis showed Hb levels were positively related

to AASI and Sym_AASI values (r=0.459, p<0.001; r=0.353, p<0.001). After adjustment for age, sex, BMI, current smoker, eGFR, uric acid, total cholesterol, high-density lipoprotein, 24 h-SBP, 24 h-PP and dipper status, Hb persisted as a independent determinant of AASI and Sym_AASI (β=0.402, p<0.001 and β=0.298, p<0.001, respectively).

Conclusion High haemoglobin seems be to associated with increased AASI in untreated essential hypertensive patients without anaemia.