

**Objectives** Arterial stiffness is one of the earliest detectable manifestations of adverse structural and functional changes within the vessel wall. And it can be measured by pulse wave velocity (PWV), which is considered as the gold standard method suggested by European Society of Hypertension/European Society of Cardiology guidelines. In the present study, we investigated the possible risk factors involving PWV in health people.

**Methods** 628 (age:  $45.0 \pm 12.3$  years, male: 283) workers from Shougang Corporation were enrolled into our study. PWV was measured by Complior apparatus. Multivariate analysis was performed to detect independent predictors of PWV among age, body mass index (BMI), systolic blood pressure (SBP), diastolic blood pressure (DBP), coronary artery disease (CHD), hypertension, diabetes mellitus (DM) and hyperlipidaemia.

**Results** The incidences of CHD, hypertension, DM, hyperlipidaemia were 4.9%, 7.5%, 3.7%, 6.2% in the entire group. However the prevalence of CHD, hypertension, DM, hyperlipidaemia were higher in workers with  $PWV > 9$  m/s than in  $PWV < 9$  m/s group (6.8% vs 2.0%, 16.7% vs 2.0%, 5.0% vs 0.5%, 7.8% vs 2.9%, all  $p < 0.05$ ). PWV was positively correlated with age, BMI, cardio-ankle vascular index (CAVI), SBP, DBP and HbA1c in all subjects ( $r = 0.695, 0.376, 0.620, 0.541, 0.491, 0.229$ , respectively, all  $p < 0.001$ ). The value of PWV was higher in male group than that of female group ( $10.66 \pm 1.60$  vs  $9.13 \pm 1.44$  m/s,  $p < 0.001$ ). Multivariate analysis showed that age, SBP and DBP were significant independent predictors of PWV in all subjects. However the independent predictors of PWV were different in male and female groups (age and SBP in male; age, DBP and DM in female, respectively). Finally, we also found that the predictors of PWV were different in different age groups.

**Conclusions** The incidence of vascular disease was growing with the increasing of arterial stiffness. PWV was a reliable evaluation index of arterial stiffness. The related factors of PWV were different in different gender and age groups. So our research might provide new precaution according to gender and age in order to prevent vascular diseases.

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**ARTERIAL STIFFNESS EVALUATION BY PULSE WAVE VELOCITY AND ITS RELATED FACTORS ANALYSIS IN SHOUGANG CORPORATION WORKERS OF CHINA**

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