

**Plasma fibrinogen level as a predictor of incident metabolic syndrome in a community-based prospective study in Hong Kong Chinese**

C.Y. Yeung<sup>1</sup>, E.Y.L. Hui<sup>1,2</sup>, T.H. Lam<sup>3</sup>, W.S. Chow<sup>1</sup>, Y.C. Woo<sup>1</sup>, C.H.Y. Fong<sup>1</sup>, A. Xu<sup>1,2</sup>, B.M.Y. Cheung<sup>1,2</sup>, K.S.L. Lam<sup>1,2</sup>;

<sup>1</sup>Department of Medicine, The University of Hong Kong, Hong Kong, <sup>2</sup>Research Centre of Heart, Brain, Hormone and Healthy Aging, <sup>3</sup>School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR

**Background and aims:** Metabolic syndrome (MS) comprises a constellation of metabolic abnormalities associated with a high risk of developing diabetes and cardiovascular diseases. Central obesity, with related insulin resistance and inflammation are considered the core of the underlying pathogenesis of MS. Fibrinogen, an acute-phase reactant in the coagulation cascade, has been shown to play pivotal role in determining the extent of local or systemic inflammation. In this study, we examined whether plasma fibrinogen was predictive of incident MS in a community-based Chinese cohort.

**Materials and methods:** Subjects were recruited from the Hong Kong Cardiovascular Risk Factors Prevalence Study (CRISPS) cohort. 2780 subjects were recruited in 1995-6 with baseline assessment performed. 1416 subjects without MS at baseline returned in 2005-8 for reassessment. MS was defined by ATP III criteria with waist circumference modified according to Asian cut-offs.

**Results:** Of the 2780 subjects at baseline, 560(20.1%) had MS. Fibrinogen level correlated positively with age, fasting glucose, waist circumference, systolic and diastolic BP, and triglycerides and inversely with HDL (all  $p < 0.001$ ). Fibrinogen level increased with the number of components (0 to 5) of MS ( $p < 0.01$ ) and was significantly higher in subjects with MS ( $p < 0.001$ ). Of the 1416 patients without MS at baseline, 286(20.2%) developed MS in 2005-8 reassessment. Subjects who had incident MS, when compared with those without, were older ( $45.7 \pm 11.2$  vs  $42.1 \pm 11.8$ ,  $p < 0.01$ ) and had higher fibrinogen level ( $2.53[2.20-2.93]$  vs  $2.40[2.10-2.79]$ ,  $p = 0.001$ ) at baseline. There was no difference in gender or smoking status. On multivariate analysis, baseline fibrinogen remained to be an independent predictor for incident MS with age-adjusted HR 1.92 (1.03-3.55,  $p = 0.039$ ) per log unit increase in fibrinogen.

**Conclusion:** Our findings confirmed plasma fibrinogen level, an indicator of inflammation, is an independent predictor of metabolic syndrome in this community-based Chinese cohort.

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