Abstract

Research Title: Level of high sensitive C-reactive protein (hs-CRP) and lipid profile in healthy volunteers with prehypertension

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Background: Atherosclerosis is a high-cost disease and its complications still represent the cause of death in most industrialized countries and Behaviors of Thai population are trend to similar Western people especially, food intake behavior. Thus, efficacious prevention includes treatment of most important cardiovascular risk factors, such as cigarette smoking, hypertension, hypercholesterolemia, diabetes and obesity. However, traditional risk factors, such as lipid profiles may be absent for subclinical people, while new emerging inflammatory factors namely high-sensitive C-reactive protein (hs-CRP), an acute phase reactant protein, is a proinflammatoryatherogenic circulating marker which can prove to be an early cardiac risk predictor.

Aim: The aims of the present study were 1) to compare hs-CRP levels between healthy volunteer with normal blood pressure and with prehypertension, and 2) to compare hs-CRP levels along with other risk including body mass index (BMI) and lipid profiles.

Materials and methods: This was a case control study including 40 healthy volunteers with prehypertension and another 40 age- and sex-matched healthy controls. Twelve-hour fasting blood samples were collected from all the participants. Serum was assayed for hs-CRP and lipid profile by COBAS INTEGRA® 400 plus (Roche-diagnostics, Switzerland). Demographic data including age and BMI had been collected. Results were analyzed by unpaired t test and risk prediction of hs-CRP and lipid profiles were calculated by relative risk with odd ratio (95% CI).

Results: All of parameters including age, BMI, cholesterol, triglyceride, HDL-cholesterol, LDL cholesterol and hs-CRP between prehypertension and control groups were statistically significant (P<0.001). BMI and all lipid profiles were within reference range except hs-CRP which was elevated among prehypertension group hs-CRP levels (6.27±7.8 mg/l) compared to controls (0.43±0.26). Relative risk of hs-CRP for prehypertension was 6.3 with odds ratio of 15.48, whereas relative risk of lipid profiles for prehypertension prediction was only 1.28 with odds ratio of 1.67.
Conclusion: The study suggests that hs-CRP is an early cardiac risk predictor even with normal lipid profile and can help measure additional risk especially subclinical people such as prehypertension.

Keyword: cardiovascular diseases, hs-CRP, prehypertension, lipid profile