

## Correspondence

**C-reactive protein as an optional component of metabolic syndrome**

To the Editor:

I was impressed with the similarity of C-reactive protein (CRP) values among Koreans, presented in the article by Choi et al [1], to our data [2] in Japanese. Median CRP values were 0.6 mg/L for men and 0.4 mg/L for women in Koreans [1] and 0.6 mg/L for men and 0.3 mg/L for women in Japanese [2], although there were some differences in methods used to measure CRP levels and in mean age and mean body mass index of the subjects. These values are quite low compared with median CRP values in Europeans. Geometric means of CRP among subjects with each component of metabolic syndrome were 0.7 and 0.7 mg/L for abdominal obesity (waist circumference  $\geq 90$  cm for men and  $\geq 80$  cm for women), 0.7 and 0.6 mg/L for blood pressure ( $\geq 130/85$  mm Hg or antihypertensive medication), 0.8 and 0.6 mg/L for high-density lipoprotein cholesterol ( $<40$  mg/dL for men and 50 mg/dL for women), 0.8 and 0.7 mg/L for triglyceride ( $\geq 150$  mg/dL), and 1.0 and 0.8 mg/L for fasting glucose ( $\geq 110$  mg/dL) in men and women, respectively, and geometric means of CRP among subjects without each component of metabolic syndrome were 0.6 and 0.4 mg/L for abdominal obesity (waist circumference  $<90$  cm for men and  $<80$  cm for women), 0.6 and 0.4 mg/L for blood pressure ( $<130/85$  mm Hg), 0.6 and 0.4 mg/L for high-density lipoprotein cholesterol ( $\geq 40$  mg/dL for men and  $\geq 50$  mg/dL for women), 0.6 and 0.4 mg/L for triglyceride ( $<150$  mg/dL), and 0.7 and 0.5 mg/L for fasting glucose ( $<110$  mg/dL) in men and women, respectively, among Koreans [1], whereas the optimal cut point of CRP as a discriminator of metabolic syndrome was 0.65 mg/L for both men and women among Japanese when body mass index of 25 or greater was applied in place of abdominal obesity [2]. The sensitivity and specificity for this CRP value as a discriminator of metabolic syndrome were 0.739 and 0.609, respectively, for men and 1.000 and 0.756, respectively, for women when impaired fasting glucose was defined as 110 mg/dL or greater, and 0.650 and 0.626, respectively, for men and 1.000 and 0.771, respectively, for women when impaired fasting glucose was defined as 100 mg/dL or greater [2]. I would appreciate it if Choi et al also analyze optimal cut points of CRP as a discriminator of metabolic syndrome among Koreans.

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**References**

- [1] Choi EY, Park EH, Cheong YS, et al. Association of C-reactive protein with the metabolic risk factors among young and middle-aged Koreans. *Metabolism* 2006;55:415–21.
- [2] Oda E, Oohara K, Abe M, et al. The optimal cut-off point of C-reactive protein as an optional component of metabolic syndrome in Japan. *Circ J* 2006;70:384–8.

**Reply: Different population, different cutoff points**

To the Editor:

Dr Oda pointed out the similarity of C-reactive protein (CRP) values among Koreans to those in Japanese [1]. As we previously discussed, median CRP values among young and middle-aged Koreans, whether they had metabolic syndrome or not, were quite low compared with those among whites [2]. Elevated CRP has been strongly associated with various characteristics of the metabolic syndrome in many studies, and its inclusion in the definition of the metabolic syndrome improved its predictive ability for diabetes and cardiovascular disease [3,4]. Therefore, it is interesting to analyze the optimal cut points as a discriminator of metabolic syndrome among Koreans and compare them with those among Japanese people.

We evaluated cutoff points of CRP from tables of sensitivity and specificity for metabolic syndrome, defined as our previous report [2]. The CRP values that corresponded with the highest accuracy (minimal false-negative and false-positive results) were presented for men and women.

The optimal cutoff point of CRP was 0.84 mg/L in men and 0.69 mg/L in women. The sensitivity and specificity for this CRP value as a discriminator of metabolic syndrome were 0.457 and 0.656, respectively, for men and 0.608 and 0.743, respectively, for women. The area under a receiver operating characteristic curve was 0.588 for men and 0.745 for women (Table 1). Receiver operating characteristic