To the Editor:

We read with great interest the study by Iacoviello et al. They investigated IL-1β gene polymorphism (−511C/T) in 406 patients with myocardial infarction (MI) at young age and 419 controls and reported the TT genotype to be inversely associated with MI. Moreover, they demonstrated mononuclear cells with TT homozygote to show decreased IL-1β production compared with those with CC homozygote. They concluded that this polymorphism affects the risk of MI at young age.

Inflammation plays an important role in atherosclerosis. Infectious agents, such as Chlamydia pneumoniae (CP), were often reported to be associated with MI. However, inflammatory responses to infection may vary from individual to individual, and only a small number of individuals develop MI. We previously investigated IL-1β (−511C/T) and IL-1Ra (a variable number repeat) gene polymorphisms and CP seropositivity in 292 patients undergoing coronary angiography. Notably, the IL-1 gene variants (IL-1β CC and/or IL-1Ra 2- or 3-repeat) were found to be associated with MI only in patients with CP seropositivity. Our report suggested that IL-1 gene polymorphisms modify the process of coronary artery disease (CAD) in patients with CP infection, leading to the development of MI. In the same line of evidence, the AtheroGene Group demonstrated that IL-6 (−174G/C) gene polymorphism was not a factor for CAD, but the association between infectious burden and CAD was modulated by IL-6 gene polymorphism.

A recent large study investigated 112 polymorphisms in 4152 subjects. Only connexin (1019C/T), plasminogen activator inhibitor (PAI) (4G-668/5G), and stromelysin-1 (5A-1171/6A) gene polymorphisms were associated with MI, whereas IL-1β gene polymorphism was not. IL-1β gene polymorphism may not be a factor for MI in a general population, but it may play a role in the development of MI in certain individuals, such as in young subjects or subjects with CP infection. Large studies are important, but studies in certain subgroups, such as the study by Iacoviello et al and ours, will provide additional valuable information.

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Association Between IL-1β Gene Polymorphism and Myocardial Infarction
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