



# Effect of IL-1 $\beta$ , IL-8, and IL-10 polymorphisms on the development of myocardial infarction

S. Wang<sup>1,2\*</sup>, Y.X. Dai<sup>3\*</sup>, L.L. Chen<sup>4</sup>, T. Jiang<sup>5</sup>, M.Q. Zheng<sup>5</sup>, C.G. Li<sup>4</sup>, Y.P. Chen<sup>2</sup>, W.H. Lin<sup>2</sup>, J.F. Zhang<sup>2</sup> and J. Jiang<sup>1</sup>

<sup>1</sup>Department of Cardiology, Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China

<sup>2</sup>Department of Cardiology, The First People's Hospital of Wenling, Wenling, China

<sup>3</sup>Shanghai Institute of Cardiovascular Diseases, Zhongshan Hospital, Fudan University, Shanghai, China

<sup>4</sup>Department of Gastroenterology, The First People's Hospital of Wenling, Wenling, China

<sup>5</sup>Central Laboratory, The First People's Hospital of Wenling, Wenling, China

\*These authors contributed equally to this study.

Corresponding author: J. Jiang  
jiangjun\_92@163.com

Genet. Mol. Res. 14 (4): 12016-12021 (2015)

Received January 29, 2015

Accepted June 8, 2015

Published October 5, 2015

DOI <http://dx.doi.org/10.4238/2015.October.5.14>

**ABSTRACT.** Myocardial infarction (MI) is currently a leading cause of death worldwide, and is caused by various environmental and genetic factors. We therefore conducted a case-control study to investigate the association between polymorphisms in interleukins IL-1 $\beta$ , IL-8, and IL-10 and MI risk. This study recruited 260 MI patients and 285 control subjects. Genotyping of IL-1 $\beta$ +3954C/T, IL-8-251T/A, IL-10-1082A/G, and IL-10-819C/T were assessed using the polymerase chain reaction-

restriction fragment length polymorphism method. By comparing the risk factors of MI between the case and control groups, we discovered that MI patients were more likely to have smoking and drinking habits, have a history of hypertension and diabetes, have higher triglycerides and low-density lipoprotein cholesterol levels, and a lower high-density lipoprotein cholesterol level ( $P < 0.05$ ). Unconditional regression analyses showed that subjects carrying the GG genotype of the IL-10 -1082A/G polymorphism were associated with increased risk of MI, and the OR (95%CI) was 2.04 (1.15-3.65). Our study found that the IL-10 -1082A/G polymorphism plays an important role in influencing the development of MI.

**Key words:** Myocardial infarction; Interleukin factors; Polymorphism