



Association of polymorphism within the interleukin-28 receptor alpha gene, but not in interleukin-28B, with lower urinary tract symptoms (LUTS) in Chinese

L. Xiao¹, L.B. Gao² and Q. Wei³

¹Department of Urology, The First People Hospital of Yunnan Province, Kunming University of Science and Technology, Kunming, China

²Laboratory of Molecular and Translational Medicine, West China Institute of Women and Children's Health, West China Second University Hospital, Sichuan University, Chengdu, China

³Department of Urology, West China Hospital, Sichuan University, Chengdu, China

Corresponding author: L. Xiao
E-mail: 0871xiaolong@163.com

Genet. Mol. Res. 14 (3): 10682-10691 (2015)

Received December 2, 2014

Accepted May 5, 2015

Published September 9, 2015

DOI <http://dx.doi.org/10.4238/2015.September.9.8>

ABSTRACT. The aim of this study was to determine the relationship between polymorphisms in the IL-28B and IL-28R genes and lower urinary tract symptoms (LUTS) in Chinese patients. Genomic DNA was extracted from 553 whole blood samples from 233 patients with LUTS resulted from benign prostatic hyperplasia and 320 control subjects. The IL-28B rs12979860 and rs8099917, and IL-28Rα rs10903035 and rs11249006 polymorphisms were genotyped using a polymerase chain reaction-restriction fragment length polymorphism assay. For rs10903035, the frequencies of the “G” allele and the “AG/GG” genotypes in the LUTS group were significantly lower than those in the control group (“G” vs “A”: OR = 0.655, 95%CI = 0.506-0.849;

AG/GG vs “AA”: OR = 0.538, 95%CI = 0.379-0.764, respectively). Combined effects analysis of rs12979860 and rs10903035 showed that the “CC+AG/GG” and “CT+AA” genotypes were significantly less frequent in the LUTS group (“CC+AG/GG” vs “CC+AA”: OR = 0.553, 95%CI = 0.381-0.801; “CT+AG/GG” vs “CC+AA”: OR = 0.429, 95%CI = 0.198-0.927, respectively). In addition, the combined effects of the rs8099917 and rs10903035 “TT+AG/GG” and “GT+AG/GG” genotypes were also significantly lower in the LUTS group (“TT+AG/GG” vs “TT+AA”: OR = 0.569, 95%CI = 0.395-0.821; “GT+AG/GG” vs “TT+AA”: OR = 0.318, 95%CI = 0.128-0.788, respectively). Stratification analysis revealed that the frequencies of the rs11249006 “AG/GG” genotypes in the subgroups of size ≤ 4.11 and IPSS ≤ 28 were significantly higher than those in the subgroups of size > 4.11 and IPSS > 28 . Therefore, the *IL-28R α* gene polymorphism might be involved in the development of LUTS.

Key words: Benign prostatic hyperplasia; Interleukin-28B; Interleukin-28B receptor α ; Single nucleotide polymorphism; Lower urinary tract symptoms