ASSOCIATION OF MICRORNA-146A RS57095329 POLYMORPHISM WITH SUSCEPTIBILITY TO GOUT TOPHI IN A CHINESE HAN POPULATION

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Background: MicroRNA-146a (miR-146a) plays an important role in regulation of autoinflammatory diseases including gout[1]. Growing evidences have demonstrated that association of miR-146a gene single nucleotide polymorphisms (SNPs) with risk of several diseases[2], but no genetic relevance studies of miR-146a gene polymorphisms to gout have been reported by now.

Objectives: To investigate the potential association of gout and the functional rs57095329 SNP of miR-146a in the Chinese Han population.

Methods: The rs57095329 SNP was detected in 448 primary gout patients (containing 76 tophi patients) and 418 healthy control subjects. Peripheral blood mononuclear cells (PBMCs) miR-146a expression was measured in 81 gout patients (including 32 tophi patients and 49 non-tophi patients) and 47 healthy subjects.

Results: No significant difference was detected in the distribution of miR-146a rs57095329 between 448 gout patients and 418 healthy subjects (P>0.05). However, significant differences were observed between 76 gout with tophi patients and 418 healthy subjects, between gout with tophi (76) and with no tophi patients (372) both in genotypes and allele distributions (P<0.01, respectively). Gout patients carrying AG/GG genotypes had a 0.323-fold reduced risk for tophi than those carrying AA genotype, and the G allele carrier of gout patients had a 0.362-fold reduced risk for tophi than those carrying AA genotype (Figure).

Conclusion: Our study shows a novel, significant association between the miR-146a rs57095329 polymorphism and a lower risk of tophi in gout patients. Furthermore, our findings suggest that this gene polymorphism might affect the genetic predisposition to tophi development and modulate the expression of miR-146a level in tophi patients. This new knowledge about miR-146a may be clinically important and confirms a role for miR-146a in the pathophysiology of tophi, with potentially important therapeutic implications.

REFERENCES:

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