



The role of smoking status and collagen IX polymorphisms in the susceptibility to cervical spondylotic myelopathy

Z.C. Wang¹, J.G. Shi², X.S. Chen², G.H. Xu², L.J. Li² and L.S. Jia²

¹Department of Orthopedics, Xinhua Hospital (Chongming), Shanghai Jiaotong University, Shanghai, China

²Department of Orthopedics, Changzheng Hospital, Second Military Medical University, Shanghai, China

Corresponding author: L.S. Jia
E-mail: drjialianshun@yahoo.com.cn

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ABSTRACT. We investigated a possible association of collagen IX tryptophan (Trp) alleles (Trp2 and Trp3) and smoking with cervical spondylotic myelopathy (CSM) in 172 Chinese patients and 176 age- and gender-matched controls. The smoking status was evaluated by smoking index (SI). The CSM cases had a significantly higher prevalence of Trp2 alleles (Trp2+) than controls (19.8 vs 6.2%, $P = 0.002$), but the prevalence of Trp3 alleles (Trp3+) was similar between the two groups (23.3 vs 21.6%, $P = 0.713$). Logistic regression analyses showed that the subjects with Trp2+ had a higher risk for CSM. We thus analyzed whether smoking status influenced the association between Trp2 alleles and CSM risk. Among Trp2+ subjects with an SI less than 100, the smoking status did not influence the effect of risk for SCM [odds ratio (OR) = 1.34, 95% confidential interval (95%CI) = 0.85-2.18, $P > 0.05$]. When SI increased from 101 to 300, the OR for CSM reached 3.34 (95%CI = 2.11-5.67, $P = 0.011$); when SI was more than 300, the OR for CSM reached 5.56 (95%CI = 3.62-7.36, $P < 0.001$). Among Trp2-

subjects with SI more than 300, the OR for CSM increased 2.14 (95%CI = 1.15-4.07, P = 0.024). We found a significant association between the Trp2 alleles and CSM risk and smoking amplifies this risk, suggesting that smoking abstinence is important for reducing CSM occurrence in subjects with high genetic risk.

Key words: Smoking; Polymorphisms; Cervical spondylotic myelopathy; Collagen IX