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1. Mol Carcinog. 2017 Mar;56(3):1021-1029. doi: 10.1002/mc.22567. Epub 2016 Oct 20.

### **Genetic variants affecting telomere length are associated with the prognosis of esophageal squamous cell carcinoma in a Chinese population.**

[Lu Y](#)<sup>1</sup>, [Yan C](#)<sup>2</sup>, [Du J](#)<sup>2</sup>, [Ji Y](#)<sup>3</sup>, [Gao Y](#)<sup>4</sup>, [Zhu X](#)<sup>2</sup>, [Yu F](#)<sup>2</sup>, [Huang T](#)<sup>2</sup>, [Dai J](#)<sup>2</sup>, [Ma H](#)<sup>2</sup>, [Jiang Y](#)<sup>2</sup>, [Chen J](#)<sup>2</sup>, [Shen H](#)<sup>2</sup>, [Jin G](#)<sup>2</sup>, [Yin Y](#)<sup>5</sup>, [Hu Z](#)<sup>2</sup>.

Author information:

1

Department of Radiotherapy, the Affiliated Cancer Hospital of Jiangsu Province of Nanjing Medical University, Nanjing, China.

2

Department of Epidemiology and Biostatistics, Jiangsu Key Lab of Cancer Biomarkers, Prevention and Treatment, Collaborative Innovation Center for Cancer Personalized Medicine, School of Public Health, Nanjing Medical University, Nanjing, China.

3

Department of Cardiothoracic Surgery, the Affiliated Wuxi People's Hospital of Nanjing Medical University, Wuxi, China.

4

Department of Medical Oncology, the Affiliated Huaian First People's Hospital of Nanjing Medical University, Huaian, China.

5

Department of Cardiothoracic Surgery, the First Affiliated Hospital of Nanjing Medical University, Nanjing, China.

#### **Abstract**

Telomeres are essential for maintaining chromosomal stability and are crucial in tumor

progression. Previous studies have explored the associations between telomere length and cancer prognosis, but the findings are inconclusive. Genome-wide association studies have identified several genetic variants associated with telomere length in Caucasians. However, the roles of telomere length and related genetic variants on esophageal squamous cell carcinoma (ESCC) prognosis are largely unknown. Therefore, we conducted a case-cohort study with 431 ESCC patients to assess the associations between relative telomere length (RTL), eight known telomere length related variants and the overall survival of ESCC in Chinese population. We found that as compared with the reference group, patients in the fifth (the longest) quintile had a significantly better prognosis [(adjusted hazard ratio (HR) = 0.58, 95% confidence interval (CI) = 0.34-0.98,  $P = 0.041$ ]. Furthermore, A allele of rs2736108 was significantly associated with both the increased RTL ( $P = 0.048$ ) and the better prognosis of ESCC (adjusted HR = 0.55, 95%CI = 0.38-0.79,  $P = 1.31 \times 10^{-3}$ ). Mediation analysis indicated that the effect of rs2736108 on ESCC prognosis was partly explained by RTL (1.99%). Stepwise Cox proportional hazard analysis suggested that rs2736108 played an important protective role in ESCC prognosis (HR = 0.57, 95%CI = 0.40-0.81,  $P = 1.97 \times 10^{-3}$ ). Our findings provide evidence that prolonged telomere length is a protective factor for ESCC patients' survival and the known telomere length related genetic variant rs2736108 can contribute to the prognosis of ESCC as well in Chinese population. © 2016 Wiley Periodicals, Inc.

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