



Clinical significance of microRNA-34a in esophageal squamous cell carcinoma

X. Lin, X.Y. Xu, Q.S. Chen and C. Huang

Department of Thoracic Surgery,
Provincial Clinical College of Fujian Medical University, Fujian Provincial Hospital,
Fuzhou, China

Corresponding author: X. Lin
E-mail: dr_linxing@126.com

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ABSTRACT. MicroRNA-34a (miR-34a) has been found to be downregulated in esophageal squamous cell carcinoma (ESCC) tissues compared with that in normal tissues ($P < 0.05$), and miR-34a overexpression increased apoptosis and decreased clonogenic formation. However, the clinical significance and prognostic value of miR-34a in ESCC has not yet been investigated. In total, 111 patients with ESCC diagnosed and treated at the Department of Thoracic Surgery of Fujian Provincial Hospital between March 2008 and February 2014 were included in this retrospective study. Quantitative real-time PCR was performed to detect expression levels of miR-34a. The associations between miR-34a expression and clinicopathological features were analyzed using χ^2 tests. For analysis of survival data, Kaplan-Meier curves were constructed, and the log-rank test was performed. The expression levels of miR-34a in ESCC tissues were significantly decreased ($P < 0.01$), compared with those in adjacent normal esophageal tissues. Low miR-34a expression in ESCC tissues was significantly associated with tumor differentiation ($P = 0.013$), lymph node status ($P = 0.038$), and advanced clinical stage ($P < 0.001$). The Kaplan-Meier analysis and log-rank test revealed that low miR-34a levels had a

significant impact on overall survival of patients with ESCC ($P = 0.006$). Multivariate analyses showed that the expression of miR-34a was an independent prognostic factor for ESCC ($P = 0.018$). Our findings indicate that there is reduced expression of miR-34a in human ESCC tissues and suggest a crucial role for miR-34a downregulation in ESCC progression and prognosis.

Key words: MiR-34a; Esophageal squamous cell carcinoma