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AB064. Downregulation of miR-129 in peripheral blood mononuclear cells is a diagnostic and prognostic biomarker in prostate cancer

Song Xu, Jing-Ping Ge, Zheng-Yu Zhang, Wen-Quan Zhou

Department of Urology, Jinling Hospital, School of Medicine, Nanjing University, Nanjing 210002, China

Background: The present study was designed to explore the clinical values of microRNA-129 (miR-129) expression in peripheral blood mononuclear cells for prostate cancer patients and the role of miR-129 in the proliferation of prostate cancer.

Methods: The peripheral blood mononuclear cells were isolated form blood simple from 98 patients confirmed with prostate cancer and 56 matched healthy volunteers. Reverse transcription quantitative real-time polymerase chain reaction (qRT-PCR) was employed to determine the expression level of miR-129 in peripheral blood mononuclear cells. Cox proportional hazards regression models and Kaplan-Meier analysis were used to evaluate the association of miR-129 expression with clinical and pathological characteristics of prostate cancer patients. The effect of miR-129 on the proliferation of prostate cancer cells *in vitro* was also determined.

Results: Reverse transcription quantitative real-time polymerase chain reaction (qRT-PCR) results showed that the expression of miR-129 was dramatically down-regulated in peripheral blood mononuclear cells for prostate cancer patients in comparison with healthy controls (P<0.05). The decrease in miR-129 expression in peripheral blood mononuclear cells was significantly associated with aggressive clinical pathological features such as histological grade (P=0.010), high preoperative PSA level (P=0.002), pathological stage (P=0.011), high Gleason score (P=0.005), lymph node metastasis (P=0.002), angiolymphatic invasion (P=0.004), biochemical recurrence (P=0.001). The prostate cancer patients with a low miR-129 expression in peripheral blood mononuclear cells had an obviously shorter BCR-free survival compared with high miR-129 expression (P<0.001). The Cox multivariate analysis established that the miR-129 expression may be an independent prognostic factor for biochemical recurrence (BCR)-free survival prostate cancer patients (P=0.000). The results of *in vitro* CCK-8 assays, as well as proliferating cell nuclear antigen phosphorylated histone-3 (P-H3) (markers of proliferation) indicated that miR-129 overexpression markedly retarded the proliferation of PC-3 and DU-145 cells.

Conclusions: Our results provide the first evidence that the miR-129is significantly downregulated in prostate cancer patients and multivariate analysis confirmed that miR-129 is a novel independent prognostic factor for prostate cancer. Overexpression of miR-129 exerts tumor suppressive functions and abrogates prostate cancer growth.

Keywords: microRNA-129 (miR-129); prostate cancer; prognostic biomarker

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AB065. EP4 antagonist suppresses bone metastasis in prostate cancer

Song Xu, Jing-Ping Ge, Zheng-Yu Zhang, Wen-Quan Zhou

Department of Urology, Jinling Hospital, School of Medicine, Nanjing

