Biomarkers

27PD  Plasma miRNA-based signatures to predict 3-year postoperative recurrence risk for patients with stage II and III gastric cancer

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Aim/Background: Our aim was to identify plasma microRNA (miRNA)-based signatures to predict 3-year postoperative recurrence risk for patients with stage II and III Gastric cancer (GC) so as to provide insights for individualized adjunctive therapy.

Methods: Plasma miRNA expression was investigated in three phases including 407 patients recruited from three centers. ABI miRNA microarray and TaqMan Low Density Array (TLDA) were adopted in the discovery phase to identify potential miRNAs. Quantitative reverse-transcriptase polymerase chain reaction (qRT-PCR) was used to assess the expression of selected miRNAs. Logistic regression models were constructed in the training set (n = 170) and validated in the validation set (n = 169). Receiver operating characteristic (ROC) analyses, survival analyses and subgroup analyses were further used to assess the accuracy of the models.

Results: We identified a 7 miRNA classifier and 7miR + pathological factors index, that provided high predictive accuracy on GC recurrence (area under the curve (AUC) = 0.725 and 0.841 in the training set; 0.627 and 0.771 in the validation set). Signatures defined high-risk patients showed significantly shorter disease-free survival (DFS) and overall survival (OS) than low-risk patients. The 7 miRNA classifier is an independent prognostic factor, and could add predictive value to traditional prognostic factors. Subgroup analyses revealed the satisfactory performance persisted regardless of stage, and the two models both displayed high accuracy in stage IIA patients.

Conclusions: The signatures are reliable prognostic and predictive tools for disease recurrence in patients with stage II and III GC.

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