PO-0717
Serum miR-345-5p predicts pathological response to chemoradiotherapy in local advanced rectal cancer

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Purpose or Objective: Neoadjuvant chemoradiation(nCRT) has been represented as the standard treatment for locally advanced rectal cancer(LARC). Tumor pathological responses and radiotherapeutic sensitivity alter variously. We aimed to explore the predict value of serum circulating miRNAs, which have already been certificated as potential therapeutic predictors in many cancers for the pathological responses and radiosensitivity after nCRT in LARC patients.

Material and Methods: Six fresh tumor biopsy samples of T3-4/N+ rectal cancer patients were collected before any treatments and these samples were classified as radiation sensitive and resistant groups according to the postoperative pathological analysis assessed by Mandard TRG scale(3 samples of TRG1 vs 3 samples of TRG4). The two groups were strictly matched by clinical features. miRNAs expression profile of the two groups were analyzed by microarray. Predictive value of radiotherapeutic sensitivity of the candidated miRNAs was further validated by 160 serum samples of LARC patients.

Results: 19 miRNAs were identified to have different expression profile between radiation sensitive and resistant groups by microarray analysis ($p<0.05$). Among these miRNAs, nine miRNAs were down-regulated and ten were up-regulated in radiation sensitive group. miR-345-5p was identified significantly correlated with radiation resistant to nCRT and appeared highly discrepant expression between the two groups (fold change>2). Low expression of miR-345-5p in serum predicted superior pathological responses to radiosensitivity after nCRT (TRG1/2) (AUC=0.69, $p<0.001$) and favorable LRFS ($p=0.02$).
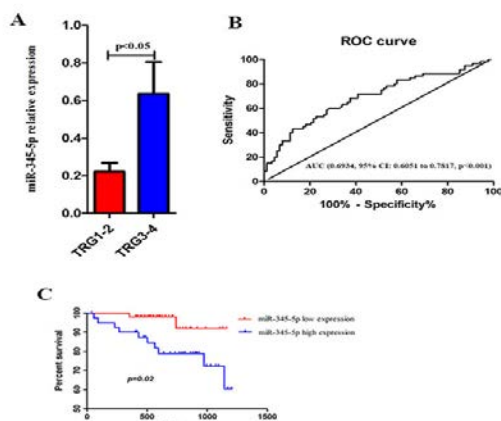

Fig 1. A: Comparison of miR-345-5p expression levels between radiation sensitive and resistant groups Statistical significance was determined by the Mann-Whitney U test; B: Predictive value of pathological responses by miR-345-5p was determined by a ROC curve test; C: Low expression of miR-345-5p was correlated with superior of LRFS.

Conclusion: Serum level of miR-345-5p is associated with favorable pathological responses to neoadjuvant chemoradiotherapy and local-regional control ratio in LARC patients. It presents as a promising biomarker to predict the radiotherapy sensitivity and prognosis.

PO-0718
The significance of postop CEA after preoperative CRT followed by TME in advanced rectal cancer

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Purpose or Objective: To evaluate the significance of postoperative carcinoembryonic antigen (CEA) level as a predictor for tumor recurrence and as a prognostic factor for survival in locally advanced rectal cancer patients treated with preoperative concurrent chemoradiation followed by curative surgery

Material and Methods: Total 1559 rectal cancer patients staged with cT3-4N0-2M0 received pelvic preoperative chemoradiotherapy (CRT) 50.4 Gy in 28 fractions followed by total mesorectal excision (TME). CEA levels were measured before CRT and after surgery. Clinicopathologic factors which could be associated with tumor recurrence and survival were analyzed.

Results: The cumulative probability of the tumor recurrence showed a steep increase with a cutoff value of 2.5 ng/mL for postoperative CEA, and the gradient decreased as postoperative CEA levels increased above 2.5 ng/mL. After median follow-up time of 46.7 months, patients with postoperative CEA level of > 2.5 ng/mL had significantly lower relapse-free survival (75.6% vs. 65.2%, p<0.001) and overall survival (88.3% vs. 78.1%, p<0.001) at 5 years than patients with CEA level o£2.5 ng/mL. In the multivariate analysis, postoperative CEA level is the only significant prognostic factors of relapse free survival (HR=1.561 and 95% CI=1.221-1.996, p<0.001) and overall survival (HR=2.073 and 95% CI=1.498-2.869, p<0.001). Increased pre-CRT CEA level is not a significant prognostic factor with consideration of postoperative CEA in multivariate analysis. The postoperative CEA level above 2.5 ng/ml is a significant predictor for distant recurrence (OR=1.689 and 95% CI=1.188-2.402, p=0.004), but not for local recurrence (OR=0.776 and 95% CI=0.389-1.549, p=0.472).

Conclusion: Postoperative CEA level above 2.5 ng/ml is a predictor for tumor recurrence and a negative prognostic factor for survival in rectal cancer patients who received preoperative CRT and curative surgery. Physician can consider intense surveillance after curative resection in these patient.

PO-0719
Target delineation of anal cancer based on MR or PET – an inter-observer, inter-modality study

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