

## Reappraisal of pretreatment carcinoembryonic antigen in patients with rectal cancer receiving preoperative chemoradiotherapy

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### ABSTRACT

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**Aims and background.** The pretreatment serum carcinoembryonic antigen (CEA) level is an independent prognostic factor in colorectal cancer. We aimed to investigate the significance of CEA as a prognostic or predictive factor in rectal cancer patients receiving preoperative chemoradiotherapy (CRT).

**Methods and study design.** In total, 609 patients with locally advanced (cStage II-III) mid to distal rectal cancer who underwent preoperative CRT and radical surgery between 2001 and 2008 were analyzed retrospectively. Predictive factors for pathologic CRT response were determined using multivariate logistic regression. A prognostic factor analysis was performed using the log-rank test and Cox proportional hazards regression.

**Results.** Elevated CEA levels (>5 ng/mL) were observed in 201 (33.0%) patients at diagnosis. Following preoperative CRT, downstaging (ypStage 0-I) occurred in 255 (41.9%) patients, of whom 88 had pathologic complete tumor regression. Pretreatment CEA was significantly associated with pathologic CRT response in terms of downstaging and tumor regression grade, and was the most relevant predictive factor. After a median follow-up period of 60 months, the 5-year disease-free and overall survival rates were 76.2% and 84.6%, respectively. Prognostic factors independently associated with recurrence or survival included ypStage, circumferential resection margin, and histologic grade.

**Conclusions.** In patients with rectal cancer who received preoperative CRT, the pretreatment CEA level was a significant and independent predictor of pathologic CRT response. However, it may not be able to predict long-term outcomes independently of ypStage.

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**Key words:** carcinoembryonic antigen, rectal cancer, preoperative chemoradiotherapy.

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