Clinical Significance of Serum Carcinoembryonic Antigen Level in Rectal Cancer Patients Who Underwent Preoperative Chemoradiotherapy

Jin Cheon Kim

Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

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Complete or near-complete pathologic response after preoperative chemoradiotherapy (CRT) for the treatment of locally advanced rectal cancer (LARC) is known to reduce local recurrence, to increase the survival rate, and concurrently to enable sphincter-preserving operations [1, 2]. Preoperative CRT has, therefore, become a standard component of combined treatment for LARC, namely, T3-4 or N+ rectal cancers. In particular, the subgroup of patients who achieve a pathologically complete response (pCR) has a very low risk of local or distant recurrence. Several prognostic parameters, radiological findings, and tumor markers have been suggested to correlate with the response to treatment in rectal cancer, but their clinical usefulness to predict CRT responses in an accurate or timely manner remains controversial. Recently, serum carcinoembryonic antigen (s-CEA) has been investigated as a prognostic marker in patients who have undergone preoperative CRT.

The role of s-CEA in determining the prognosis after a radical resection for LARC has been well documented. Perez et al. [3] reported that post-CRT s-CEA levels lesser than 5 ng/mL were associated with an increased rate of downstaging, with pCR, and with a favorable prognosis [4]. In our recent study involving 333 LARC patients who underwent preoperative CRT, CEA grouping according to changes in the s-CEA concentration by using the ratio of pre- to post-CRT (70% as a cut-off value) presented an independent prognostic factor for disease-free survival with-

out showing any correlation between pre-CRT s-CEA level and pathologic tumor response [5]. Presently, few biomarkers are considered promising as CRT-predictive markers. The s-CEA level of pre- or post-CRT appears to be closely associated with the prognosis in LARC patients, but its predictive value for pathologic response needs to be further verified. Additionally, efficient individualized regimens must be continuously investigated for patients with poor CRT-response and/or elevated s-CEA after CRT.

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Correspondence to: Jin Cheon Kim, M.D.

Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, 88 Olympic-ro 43-gil, Songpa-gu, Seoul 138-736, Korea
Tel: +82-2-3010-3489, Fax: +82-2-474-9027
E-mail: jckim@amc.seoul.kr

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