MEDICAL ONCOLOGY

CEA levels predict response to therapy in rectal cancer

Preoperative chemoradiotherapy is the standard treatment component of multimodality therapy based on studies showing an improved local control rate for this approach compared with surgery alone or surgery and postoperative chemoradiotherapy. Not all patients, however, experience the same degree of benefit from preoperative chemoradiotherapy, with only 10–27% experiencing a complete response. Serum carcinoembryonic antigen (CEA) is the most widely used tumor marker for colorectal malignancies but few studies have examined the clinical utility of CEA in patients with rectal cancer. Park and coauthors examined whether CEA levels could be used as a predictor of response to preoperative chemoradiotherapy and a prognostic factor for patients with rectal cancer.

In total, 352 patients with primary rectal carcinomas received preoperative chemoradiotherapy, followed by

Image supplied by S.-B. Lim, Asan Medical Center, Korea.

radical proctectomy 4–8 weeks after completion of chemoradiotherapy. Patients were categorized into three groups according to their CEA levels: prechemoradiotherapy ≤ 3 ng/ml (group A); prechemoradiotherapy > 3 ng/ml and postchemoradiotherapy ≤ 3 ng/ml (group B); and > 3 ng/ml before and after chemoradiotherapy (group C). Regardless of pathologic stage, all patients received postoperative chemotherapy.

A good response was achieved in 94 patients (26.7%); factors such as age, sex, histologic type and grade, and distance of the tumor from the anal verge did not affect response. There was a significant

difference in prechemoradiotherapy CEA levels between good and poor responders. Significantly more patients in group A achieved a high response rate compared with groups B and C. Multivariate analysis showed that prechemoradiotherapy CEA level was an independent predictor of response to chemoradiotherapy. The 3-year disease-free survival rates for patients in groups A and B were significantly better than for those in group C.

Measurement of serum CEA levels before chemoradiotherapy could be a useful tool for predicting response to chemoradiotherapy and an independent prognostic factor after preoperative chemoradiotherapy and surgery.

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Original article Park, J.W. *et al.* Carcinoembryonic antigen as a predictor of pathologic response and a prognostic factor in locally advanced rectal cancer patients treated with preoperative chemoradiotherapy and surgery. *Int. J. Radiat. Oncol. Biol. Phys.* **74**, 810–817 (2009).