SUMMARY

The purpose of my doctoral thesis was a retrospective evaluation whether the intensity of epidermal growth factor receptor (EGFR) expression in tumor biopsy predicts tumor response to preoperative chemoradiotherapy in patients with locally advanced gastric carcinoma.

Thirty-six patients with gastric adenocarcinoma in clinical T2-4 stage and/or with nodal metastases were studied. Preoperative treatment consisted of 30-45 Gy of gastric irradiation with continuous 5-fluorouracil and weekly cisplatin. Surgical resection was performed 4-6 weeks later. EGFR expression in pretreatment tumor biopsies was assessed by immunohistochemistry. Level of EGFR expression was determined from the intensity and extent of staining. Tumor response after chemoradiotherapy was defined as a reduction of at least one T-stage level and/or finding of intense tumor regression in histopathologic examination.

Seventeen patients responded to preoperative chemoradiation - 8 patients (22%) had pathologic complete response, 9 patients (25%) were downstaged. Positive EGFR expression was found in 8 tumors (22%), and represented a significant predictive marker of poor tumor response in multivariate logistic regression analysis (p = 0.015). Response to chemoradiotherapy was found in 57% (16/28) of EGFR negative patients and in 13% (1/8) of EGFR positive patients (p = 0.044). None of the eight EGFR positive patients achieved pathologic complete response in comparison with 8/28 (29%) of patients with EGFR negative staining (p = 0.16).

The results suggest that EGFR expression may represent a molecular marker predictive for poor response to preoperative chemoradiotherapy in locally advanced gastric carcinoma.