Expression of FXYD-3 is an independent prognostic factor in rectal cancer patients with preoperative radiotherapy.

PURPOSE: FXYD-3 (MAT-8) is overexpressed in several types of cancers; however, its clinical relevance in rectal cancers has not been studied. Therefore, we examined FXYD-3 expression in rectal cancers from the patients who participated in a Swedish clinical trial of preoperative radiotherapy (RT) to determine whether FXYD-3 was overexpressed in rectal cancers and correlated with RT, survival, and other clinicopathologic variables.

METHODS AND MATERIALS: The study included 140 rectal cancer patients who participated in a clinical trial of preoperative RT, 65 with and 75 without RT before surgery. FXYD-3 expression was immunohistochemically examined in distant (n = 70) and adjacent (n = 101) normal mucosa, primary tumors (n = 140), and lymph node metastasis (n = 36). RESULTS: In the whole cohort, strong FXYD-3 expression was correlated with infiltrative tumor growth (p = 0.02). In the RT group, strong FXYD-3 expression alone (p = 0.02) or combined with phosphatase of regenerating liver was associated with an unfavorable prognosis (p = 0.02), independent of both TNM stage and tumor differentiation. In tumors with strong FXYD-3 expression, there was less tumor necrosis (p = 0.02) and a trend toward increased incidence of distant metastasis (p = 0.08) after RT. None of these effects was seen in the non-RT group. FXYD-3 expression in
the primary tumors tended to be increased compared with normal mucosa regardless of RT. CONCLUSION: FXYD-3 expression was a prognostic factor independent of tumor stage and differentiation in patients receiving preoperative RT for rectal cancer.