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Titel des Beitrags: The simultaneous expression of both ephrin B3 receptor and E-cadherin in Barrett’s adenocarcinoma is associated with favorable clinical staging.

Abstract: In intestinal epithelium, tyrosine kinase receptor Ephrin B3 (Eph B3) maintains the architecture of the crypt-villus axis by repulsive interaction with its ligand ephrin-B1. While loss of Eph B3 is linked to colorectal cancer initiation, overexpression of Eph B3 in cancer cell lines inhibits growth and induces functional changes with decreased mesenchymal and increased epithelial markers. In order to study this tumor suppressor activity of Eph B3 in esophageal adenocarcinoma we analyzed the simultaneous expression of Eph B3 and E-cadherin in both the healthy esophagus and in Barrett's carcinoma. Simultaneous expression of Eph B3 and E-cadherin was investigated in samples from 141 patients with Barrett's carcinoma and from 20 healthy esophagi using immunohistology and quantitative PCR. Results from healthy squamous epithelium, Barrett's metaplasia and staging-specific esophageal adenocarcinoma were correlated. A significantly reduced E-cadherin mRNA expression could be detected in adenocarcinoma compared to dysplasia. The immunohistological activity of E-cadherin and Eph B3 was reduced in adenocarcinoma compared to dysplasia or healthy esophageal mucosa. The intracellular E-cadherin distribution changed significantly from the cytoplasm to the membrane, when
the Eph receptor was simultaneously expressed. Simultaneous expression of E-cadherin and Eph B3 showed a significant inverse correlation to tumor stage. We present novel evidence of the tumor suppressor activity of Eph B3 in esophageal adenocarcinoma possibly due to the impact on redistribution of cellular E-cadherin to the membrane. Our results suggest that this effect might play a role in the dysplasia-adenocarcinoma sequence, the infiltrative growth pattern and the development of lymph node metastases.