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HuR (ELAV1) as a potential tumor marker in gastroesophageal junction adenocarcinoma

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HuR is a master protein involved in the regulation of mRNA stability. Increased HuR expression and cytoplasmic translocation in tumors are associated with poor prognoses and altered responses to chemotherapy. HuR expression has been studied in esophageal squamous cell carcinoma, but not in gastroesophageal junction (GEJ) adenocarcinoma arising in Barrett's esophagus. To study HuR, formalin fixed paraffin embedded tissue blocks of twenty patients who underwent endoscopic mucosal resection for GEJ adenocarcinoma without pre-operative neoadjuvant therapy and five patients with Barrett's esophagus without dysplasia were retrieved upon approval of Institutional Review Board. Tissue blocks were sectioned and stained with 1:500 diluted mouse monoclonal anti-Human HuR antibody clone HuR-Rb SC-5261 (Santa Cruz, CA) and a horseradish peroxidase-conjugated secondary antibody with a Leica BOND-III automated IHC/ISH-stainer. The cytoplasmic and nuclear staining patterns of HuR were evaluated separately and scored. The intensity and cytoplasmic localization of HuR staining correlate with the neoplastic potential of the lesion. HuR staining is only detected in nuclei of benign metaplastic columnar mucosa (nuclear AIRS:2.3; cytoplasmic AIRS: 0). Barrett's epithelium shows stronger nuclear staining (AIRS:6.0) and some cytoplasmic staining (AIRS:5.2). Adenocarcinomas including poorly-differentiated adenocarcinoma and adenocarcinoma with mucinous differentiation show markedly increased HuR staining in both nuclei (AIRS:9.4) and cytoplasm (AIRS:9.4). In specimens with Barrett's epithelium and dysplasia, HuR expression appears higher in the latter. This study provides a potential novel diagnostic and differential diagnostic marker of esophageal glandular neoplasms and may also provide a novel therapeutic opportunity.

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