Epstein-Barr virus in gastro-esophageal adenocarcinomas - single center experiences in the context of current literature.

Abstract:
Epstein-Barr virus (EBV)-associated gastric carcinomas (GC) represent a distinct and well-recognized subtype of gastric cancer with a prevalence of around 10% of all GC. In contrast, EBV has not been reported to play a major role in esophageal adenocarcinomas (EAC) and adenocarcinomas of the gastro-esophageal junction (GEJ). We report our experiences on EBV in collections of gastro-esophageal adenocarcinomas from two surgical centers and discuss the current state of research in this field. Tumor samples from 465 primary resected gastro-esophageal adenocarcinomas (118 EAC, 73 GEJ, and 274 GC) were investigated. Presence of EBV was determined by EBV-encoded small RNAs (EBER) in situ hybridization. Results were correlated with pathologic parameters (UICC pTNM category, Her2 status, tumor grading) and survival. EBER positivity was observed in 14 cases. None of the EAC were positive for EBER. In contrast, we observed EBER positivity in 2/73 adenocarcinomas of the GEJ (2.7%) and 12/274 GC (4.4%). These were of intestinal type (seven cases) or unclassifiable (six cases), while only one case was of diffuse type according to the Lauren classification. No association between EBV and pT, pN, or tumor grading was found, neither was there a correlation with clinical outcome. None of the EBER positive cases were Her2 positive. In
conclusion, EBV does not seem to play a role in the carcinogenesis of EAC. Moreover, adenocarcinomas of the GEJ show lower rates of EBV positivity compared to GC. Our data only partially correlate with previous reports from the literature. This highlights the need for further research on this distinct entity. Recent reports, however, have identified specific epigenetic and genetic alterations in EBV-associated GC, which might lead to a distinct treatment approach for this specific subtype of GC in the future.