AB046. P017. Identification of pathological ampullary adenocarcinomas subtypes and their prognosis using the immunohistochemical score of CDX2, CK7 and CK 20

Matteo Palmeri[1], Luca Pollina[1], Niccola Funel[1], Niccolò Furbetta[1], Gregorio Di Franco[1], Simone Guadagni[1], Desirée Gianardi[1], Matteo Bianchini[1], Leonardo Rossi[1], Enrico Vasile[1], Alfredo Falcone[1], Giulio Di Candio[1], Marco Del Chiaro[2], Franco Mosca[1], Luca Morelli[1]

[1]Johns Hopkins University School of Medicine, Baltimore, Maryland, USA; [2]Karolinska Institutet, Stockholm, Sweden

Background: Ampullary adenocarcinomas (AACs) are heterogeneous and numerous methods of categorization histological subtypes exist. Histology phenotype based on immunohistochemistry (IHC) of caudal-type homeodomain transcription factor 2 (CDX2) and Cytokeratins (CK7 and CK20) staining has been tested in order to identify three most important sub-classes: intestinal (INT), pancreato-biliary (PB) and mixed-type (MT). The identification of MT tumors is often difficult with conventional histology and its clinical outcome is unclear. We attempt to identify only two subtypes in AACs samples, using an IHC score based-on CDX2, CK7 and CK20 evaluation on AAC samples.

Methods: Tissue samples from 20 patients with resected AAC were arranged on tissue microarrays (TMA) platform and their classification was obtained by histology and IHC expression of CDX2, CK7 and CK 20. IHC score was obtained for each marker summing the number of positive cells (0: no stained cells; 1: <25%; 2: <50% and 3: >50%) and their intensity (1, weak; 2, middle and 3, strong). A global score (GS) for each tumor was obtained by the contribution of each marker. The MT tumor were located into INT or PB group on the basis of predominant immune-molecular phenotype. The overall survival values of INT and PB patients were obtained by Kaplan-Meyer methods.

Results: Histological parameters defined AAC subtype samples as follows: 15% INT, 45% PB and 40% MT. Using the IHC expression and the GS, 75% and 25% of MT samples were assigned to INT and PB, respectively. The mean value of GS was 9.5 (range, 4.0–16.0). All INT samples had a GS over the mean, while all PB sample had a global score under the mean (P=0.0011). In particular, the INT samples are identified by high expression of CDX2 and CK20, while PB samples showed high expression of CK7 and negative expression of CK20 (P=0.0008). The overall survival (OS) of molecular intestinal histomolecular phenotype (INT) *vs.* PB phenotype showed significant differences (85.7 *vs.* 20.3 months; HR, 8.39; 95% CI, 1.38–18.90; P=0.0152).

Conclusions: Histopathologic and molecular criteria combination define clinically relevant histomolecular phenotypes of AACs and potentially represent distinct diseases with significant implications for current therapeutic strategies.

doi: 10.21037/apc.2018.AB046

Cite this abstract as: Palmeri M, Pollina L, Funel N, Furbetta N, Di Franco G, Guadagni S, Gianardi D, Bianchini M, Rossi L, Vasile E, Falcone A, Di Candio G, Del Chiaro M, Mosca F, Morelli L. Identification of pathological ampullary adenocarcinomas subtypes and their prognosis using the immunohistochemical score of CDX2, CK7 and CK 20. Ann Pancreat Cancer 2018;1:AB046. doi: 10.21037/apc.2018.AB046