



## AB100. P074. Novel biomarkers for differential diagnosis of intraductal papillary mucinous neoplasms revealed by profiling microbial composition and translocation markers in liquid biopsies

Rogier Gaiser, Haleh Davanian, Hassan Alkharaan, Carlos Fernández Moro, Zeeshan Ateeb, Marco Del Chiaro, Margaret Sällberg Chen

Karolinska Institutet, Stockholm, Sweden

**Abstract:** Pancreatic ductal adenocarcinoma (PDAC) has a major impact on public health, being the fourth-leading cause of cancer-related death in Western countries with a low overall survival rate and rapid deterioration in quality of life. Intraductal papillary mucinous neoplasms (IPMNs) are neoplastic precursor lesions which are understood to evolve from lesions with low-grade dysplasia to high-grade dysplasia to PDAC. Currently, the accuracy of pre-surgery differential diagnosis of cystic lesions is merely 47–78%. However, only after surgical resection of the pancreas can the type of cystic neoplasms and degree of IPMN dysplasia accurately be determined. The discovery of novel biomarkers that improve timely and accurate diagnosis of IPMN and its grade of dysplasia, and thus assist the determination of health risk, are of great importance for better patient management and to minimize diagnostic

errors and unnecessary surgical procedures. We hypothesize that gut microbiota may have a role on pancreatic tumorigenesis and progression, given the strong association of oral pathogens such as *P. gingivalis* and *F. nucleatum* with systemic inflammation and intestinal cancers. We aimed to (I) determine whether (oral) bacteria are present in pancreatic cystic lesions, and (II) whether cystic microbiota composition associates with IPMN disease severity. We have established a biobank of pancreatic cyst fluid and peripheral blood from patients with pancreatic cystic lesions (n=90, IPMN and benign neoplasms as control) with post-surgery validated diagnosis. The absolute bacterial 16S rRNA gene copy numbers were determined by TaqMan qPCR and microbial compositional profiling by 16S rRNA gene sequencing is being undertaken. Additionally, we measured the magnitude of microbial translocation (MT) inflammation markers in these samples. We found a statistically significant difference of bacterial 16S gene quantities as well as biomarkers of MT and inflammation between different types of pancreatic cystic lesions, as well as significant correlation with IPMN grade of dysplasia. Our finding that several novel biomarkers from liquid biopsies might be used to differentiate between benign and (pre-)malignant pancreatic cystic lesions is of important clinical relevance in diagnosis and treatment for IPMN-related morbidity and mortality, including PDAC.

doi: 10.21037/apc.2018.AB100

**Cite this abstract as:** Gaiser R, Davanian H, Alkharaan H, Moro CF, Ateeb Z, Del Chiaro M, Sällberg Chen M. Novel biomarkers for differential diagnosis of intraductal papillary mucinous neoplasms revealed by profiling microbial composition and translocation markers in liquid biopsies. Ann Pancreat Cancer 2018;1:AB100. doi: 10.21037/apc.2018.AB100