00516 Somatostatin Receptor 2 Expression and Clinical Significance in Pulmonary Lymphoepithelioma-like Carcinoma

Han Shuting[1], Nei Wenlong[1], Joe Yeong[1], Cindy Lim[1], Loh Joe Hua[2], Ang Mei-Kim[1], Darren Lim[1], Tan Eng Huat[1], Toh Chee Keong[1], Ng Quan Sing[1], Tan Shao Weng Daniel[1], Lim Kiat Hon Tony[2], Takano Angela[2], Amit Jain[1]

[1]National Cancer Centre Singapore, [2]Singapore General Hospital

Aims: Pulmonary lymphoepithelioma-like carcinoma (PLELC) is a rare Epstein-Barr virus (EBV) associated cancer, histologically indistinguishable from nasopharyngeal carcinoma (NPC). Somatostatin receptor type 2 (SSTR2), is a bonafide theranostic target in neuroendocrine tumour. It is also expressed in NPC, based on autoradiography and positron emission tomography (PET). SSTR2 expression has not been reported in PLELC. We aim to investigate SSTR2 expression and co-localization with EBV positive PLELC cells using immunohistochemistry (IHC) and investigate its clinical significance

Methodology: Clinical demographics include age, gender, TNM staging, EBV titre, smoking status, survival and treatment regime. Archival formalin fixed, paraffin embedded (FFPE) tissue of PLELC (2003 - 2016) at National Cancer Centre Singapore were retrieved. IHC staining for SSTR2 and Epstein-Barr encoding region in-situ hybridisation (EBER-ISH) were performed using a dual-staining technique.

Result: We report clinical data from 20 PLELC patients. The median age at diagnosis was 56.5; 80% of the patients were female and all non-smokers. 55% of the patients have stage IV disease. Median OS was 57.7 months (95% CI, 21.8 to undefined).

Sixteen out of 20 patients stained positive for SSTR2 on IHC. SSTR2 expression co-localised with EBER positive cells. Nine out of 11 (82%) patients with stage IV PLELC stained positive for SSTR2 while 7 out of 9 (78%) stage I-III disease stained positive.

2 year overall survival (OS) by SSTR2 status was 100% in SSTR2 negative and 65.2% (CI 35.1, 84.0) in SSTR2 positive patients, p=0.467 by Log Rank Test. 2 year OS by stage is 85.7% (CI 33.4, 85.7) % for stage I-III and 63.6% (CI 29.7, 84.5) for stage IV disease, p=0.014.

Conclusion: In PLELC, high levels of SSTR2 IHC expression is reported with co-localisation with EBV-infected cells. A high proportion of stage IV patients had SSTR2 positive tumours. This study opens up the possibility of using SSTR2 theranostics for these patients.