Detection Rate of SFTPB and KRT14 Expression by Immunohistochemistry Method in Squamous Cell Carcinoma of Lung and Head-Neck Cancer Tissue

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The Thai Cancer, 2016, 31.56.001

**Background:** Concomitant lung squamous cell carcinoma (LSCC) and head-neck squamous cell carcinoma (HNSCC) may commonly occur in heavy tobacco users. Currently there is no practical standard tool to distinguish between the two primary organs.

**Objective:** To investigate the utility of detecting SFTPB and KRT14 by Immunohistochemistry (IHC) in LSCC and HNSCC tissue.

**Method:** Eighty-three tumor tissues from squamous cell carcinoma patients who had been diagnosed single cancer either LSCC or HNSCC (42 LSCC, 41 HNSCC) during 2008-2012 in our institute were selected. Demographic, clinical and pathological data were reviewed from hospital medical records. IHC testing for SFTPB and KRT14 were done in all recruited samples.

**Results:** Detection rate of KRT14 expression by IHC in LSCC and HNSCC tissue were not statistically different [36/42(85.7%) vs. 40/41(97.6%), p=0.68]. SFTPB expressions were also not statistically different in LSCC and HNSCC [3/42(7.1%) vs. 2/41(4.9%), p = 0.68]. With a semiquantitative scoring system, HNSCC had a significantly higher mean percentage of KRT14 expression 70.2 ± 37.3% than LSCC 41.3 ± 38.0% (p< 0.01). We used ROC curves to evaluate the highest performance of the KRT14 staining. At cut-off value of 85%, the sensitivity and specificity were 61.0 % and 78.6 %, respectively.

**Conclusion:** Our study suggests that detection of KRT14 expression by IHC may serve as a potential biomarker to determine the primary LSCC versus lung metastatic from HNSCC.