Prevalence of Retinoblastoma Protein in Negative Human Papilloma Virus in Non-nasopharyngeal Head and Neck Squamous Cell Carcinoma in Patients at The King Chulalongkorn Memorial Hospital

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**Abstract**

**Background:** Previous studies of human papilloma virus (HPV) associated head and neck squamous cell carcinoma (HNSCCs) have shown that the frequent loss of retinoblastoma protein (pRb) implicates in prognosis and response to treatment. Limited data regarding the pRb expression in HPV negative HNSCCs are available. In this study we characterized the expression rate of pRb in HPV negative HNSCCs at King Chulalongkorn Memorial hospital.

**Object:** The aim of this study is to determine the prevalence of expression of retinoblastoma protein (pRb) in non-nasopharyngeal HNSCC tumor tissue. The secondary objective is to find an association between the expression of pRb and clinical outcomes.

**Method:** Non-nasopharyngeal HNSCCs patients who had been treated at the King Chulalongkorn Memorial Hospital during 2000-2011 were enrolled. Tumor tissue from 53 patients confirmed HPV negative were collected to manually construct tissue microarray (TMA). Expression of pRb was performed by IHC on TMA with anti-Rb monoclonal antibody clone 1F8. All clinical parameters were reviewed and collected from available medical records.

**Results:** Twenty-four (45%) of the 53 HNSCCs samples exhibited retinoblastoma protein (pRb) by IHC. Among cancer sites, 9 of 24 (38%) of oropharynx, 8 of 24 (33%) of oral cavity and 7 of 24 (29%) of larynx displayed pRb in tumor tissues. There was no major difference in demographic data, tumor characteristic, and treatment modalities between pRb-positive and pRb-negative samples HNSCCs. Survival analyses indicated that tumor location, non-oral cavity (P=0.005), and T-stage 3/4 (P=0.002) were predictors for poorer survival. There was a trend toward a better survival in tumor expressing pRb than the tumor with absence of pRb, 27.95 months and 21.52 months respectively, but this did not reach a statistical significance (p=0.52).

**Conclusion:** The prevalence of pRb in our study was 45%. Absence of pRb tumors has a trend toward poorer prognosis. Further study in a larger population is warranted.