

Immunohistochemical Study to Evaluate Prognostic Factors of Nasopharyngeal Carcinoma Treated with Radiotherapy

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Purpose : To evaluate the prognostic factors of nasopharyngeal carcinoma (NPC) treated with radiotherapy (RT), through immunohistochemical study

Patients and Methods : From January 1998 through December 2006, 68 patients were histologically diagnosed as non-metastatic NPC and treated with RT at Seoul National University Hospital. Only 38 patients had the paraffin block for the immunohistochemical study. Thirty-one patients had undifferentiated carcinoma and 7 patients had squamous cell carcinoma. Thirty-two patients (84%) had advanced stage NPC (2002 AJCC Stage III-IV). All patients, except for 6, were treated with induction chemotherapy with two or three cycles of cisplatin based regimen followed by either radiotherapy alone (19 patients) or concurrent chemoradiotherapy with cisplatin (13 patients). Immunohistochemical staining was done for Met, COX-2, EGFR and nm23-H1 expression with the usual methods.

Result : The median follow-up time was 30 months (range, 11–83 months) for all patients and 39 months (range, 19–83 months) for surviving patients. Met expression was po-

sitive in 35 patients (92%). The Met extent was low ($\geq 10\%$ and $<50\%$) in 13 patients, and high ($\geq 50\%$) in 22 patients. The 5-year overall survival (OS) rate of patients with high Met extent was significantly worse than that of patients with low Met extent (48% vs. 84%, $p=0.015$). Met extent was also a significant prognostic factor in multivariate analysis ($p=0.012$). No correlation was observed between Met extent and T stage, N stage, stage group, gender, age and the response of chemotherapy or RT. Met extent showed moderate correlation with COX-2 expression (Pearson coefficient 0.496, $p=0.002$), but COX-2 expression did not affect OS. Either EGFR or nm23-H1 expression was not prognostic factor for OS in this study.

Conclusion : High Met extent ($\geq 50\%$) is strong and an independent prognostic factor that predicts poor OS in NPC treated with RT.

Key Words : Immunohistochemical staining · Nasopharyngeal carcinoma · Prognostic factor.