EXPRESSIONS OF ESTROGEN OCCUPIED RECEPTOR (EoR) AND PROGESTERONE OCCUPIED RECEPTOR (PoR) AND C-erbB-2 ONCOPROTEIN IN HUMAN NASOPHARYNGEAL CARCINOMAS

Xie Zuofu, Lin Xiandong, and Zhang Jingshi

Department of Immunopathology, Fujian Provincial Tumor Hospital, Fuzhou 350014

It is first reported here that estrogen occupied receptor (EoR) and progesterone occupied receptor (PoR) expressed in cancerous tissues (59.57% and 82.98% respectively) and morphologically normal epithelium (50--77.78% and 70--88.89% respectively) in nasopharyngeal carcinomas (NPCs) with insignificant difference (P > 0.05). Positive rates of EoR and PoR increased greatly in clinical stage I and II, compared with in I (P < 0.05), and exhibited insignificant difference between female cases and male ones (P > 0.05). Positive rate of C-erbB-2 was 19.15% in cancerous cells, and 9.68% in stage II and 66.67% in stage IV in NPCs (P < 0.05). Significant difference of C-erbB-2 expression was observed between bilateral cervical lymph node metastasis (BCLM) and unilateral ones (P < 0.005) but not for EoR or PoR (P > 0.05). These findings suggest that EoR or PoR may be correlated with aggravation but not genesis and node metastasis in NPCs and that C-erbB-2 may be correlated with aggravation and promotion of formation of node metastasis in NPCs.

Key words: Female hormone receptors, C-erbB-2 oncoprotein, Clinical stage, Node metastasis, Nasopharyngeal carcinoma.

Female hormone receptors, estrogen receptor

MATERIALS AND METHODS

Tissues

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Of 50 cases of nasopharyngeal biopsied tissues, 3 is chronic nasopharyngitis (CNPs) and 47, NPCs, including 45 poorly-differentiated squamous cell carcinomas and one poorly-differentiated adenocarcinoma and carcinoma with vesicular nuclei, were obtained from three cases of patients with CNP and 47 with NPC from Department of Radiotherapy in our Hospital from May 2 to August 29, 1994. Of 47 cases of patients with NPC, 35 are male and 12, female, aged 20—63 years (mean, 42 years). All biopsied tissues were conventionally fixed in formalin and embedded in paraffin.

Immunohistochemical Agents

Polyclonal antibody (PAb) RAB - 9301 against estradiol, RAb 9302 against progesterone and RAb 0046 against C - erbB - 2, and the streptavidin biotin (S - P) kit, produced by Zymed Laboratories, CA, were purchased from Fuzhou Maxim Biotech Inc.

Immunohistochemical Methods

As previously described but with some modifications. Procedure was described briefly as follows:

1. Added 50 μl hydrogen peroxide (agent A) to block endogenous peroxidase activity and incubated for 10 min at room temperature (RT) after dewaxed in xylene and then rehydrated in graded alcohols.

2. Added 50 μl unimmunized animal serum (agent B) and incubated for 10 min at RT

3. Added 50 μl primary antibody and incubated for 60 min at RT. Did not pretreat sections with estrogen or progesterone for detection of occupied receptor before addition of primary antibody.

4. Followed by incubation with 50 μl biotiny - lated antibody (agent C) and with 50 μl strepavidin - peroxidase (agent D), both for 10 min at RT.

5. Added DAB solution (agent E) and incubated for 10 min at RT and then washed in running water, counterstained lightly with haematoxylin, dehydrated, cleared and mounted with coverslips.

All primary antibodies and agents A, B, C, D, E are "ready to use" types. Washed in PBS for 5 min × 3 in the end of step 1, 3, 4. Negative control slides were carried out by replacement of primary antibody with PBS. Immunostaining intensity was defined as follows, according to counting 200 cells in four separate fields of each section: +, less than 30% positive cells; ++, 30—60% and ++++, more than 60%.

Statistical Analysis

Significant difference of datas in this study was judged by x² test.

RESULTS

Expression of EoR or PoR in Neoplastic and Non - neoplastic Epithelium in NPC

As showed Table 1, expressions of EoR and PoR were observed in cancerous and non - neoplastic epithelium, including stratified squamous and columnar epithelium in NPCs, with insignificant difference between them ( P > 0.05). EoR was found to localize in cytoplasm in all cases (100%), and PoR, in cytoplasm 89.36% (42/47) and in concurrence of cytoplasm and nucleuses, 10.64% (5/47) (Figure 1, 2).

Expressions of EoR and PoR and Their Relation to Sex of Patients with NPC

As showed Table 2, gentle elevated frequencies of expressions of EoR and PoR were present in female cases without significant difference, compared with male ones ( P > 0.05).

Expressions of EoR and PoR and C - erbB - 2 and Their Relation to Clinical Stages in NPCs

As showed Table 3, significant decline of