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THE STUDY OF ESTROGEN AND PROGESTERONE RECEPTOR IN NASOPHARYNGEAL CARCINOMA

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From February to September in 1994, a total of 58 patients with nasopharyngeal carcinoma (NPC) were testified by pathology. It included 56 poorly differentiated squamous cancer, 1 poorly differentiated adenocarcinoma , 1 B-cell lymphoma. Clinical staging: II stage 6 cases, III stage 20 cases, IV stage 24 cases, recurrence 8 cases. The results showed that ER and PR positive rate were 26/58 (44.8%) and 28/58 (48.3%). The rate has not relation to the age and sex. There was a contrary rela-tion between ER, PR positive rate and clinical staging and VCA-IgA. When ER, PR were negative and VCA-IgA was 1:40 in IV stage patients, its accorded rate was 9/12 (75%); when only VCA-IgA was 1:40, accorded rate was 13/33 (39.4%). Total CR was 38/49 (77.6%). When both ER and PR were positive, CR was 79%; when both ER and PR were negative and VCA-IgA was 1:40, CR was 58.3%. We regard NPC is belong to high expression tumor of estrogen and progesterone, and positive expression can reflect tumor developing tendency and relate to recent prognosis. The paper suggests that it is possible to treat NPC with the endocrine therapy. Examining ER, PR and VCA-IgA together can improve the analysis of the prognosis of NPC.

Key words: NPC ER PR receptor, Immunohistochemistry.

Recent study showed that the estrogen and progesterone receptors are present in many non-hormone-dependent tumor. The contents of receptor can directly affect the occurrence and growth of carcinoma. But the studies of estrogen and progesterone receptors in nasopharyngeal carcinoma (NPC) are rarely reported in China. In order to offer theoretic bases for clinical endocrine therapy, we detect the estrogen and progesterone in NPC by immunohistochemical method.

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MATERIALS AND METHODS

Clinical Data

From February to September in 1994 in our hospital, we studied 58 cases of NPC which testified by pathology. Among those 44 were males and 14 were females. The median age was 45.6. The pathologic diagnoses: poorly differentiated squamous carcinoma 56 cases, poorly differentiated adenocarcinoma 1 case, B-cell lymphoma. Clinical staging: II stage 6 cases, III stage 20 cases, IV stage 24 cases, recurrence after radiotherapy 8 cases.

Measuring Method

Kit was provided by MBI company. The biopsy samples of NPC were prepared by 10% formalin fixing, regularly dehydrated, paraffin embedding, HE stained, SP stained of immunohistochemical slice. Positive judgment criteria: Positive cell are those in which brown-yellow granules are present. The positive distribution range is determined by the percentage of positive tumor cells in all cells in every slice: <1/4 is (+), 1/4-1/2 is (++),

>1/2 is (+++). If no positive granule is in tumor cell, or positive granule only in one or two cells, it is considered as (-) (necrotic area is not considered) (Figure 1, 2).

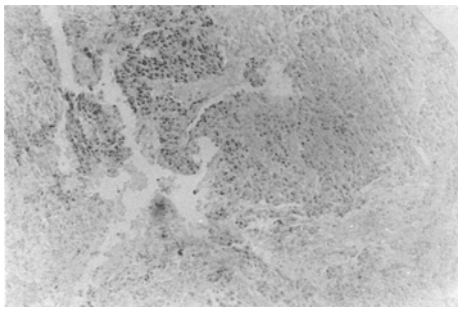

Fig. 1. Positive cells staining for ER in NPC (S–P method × 10)

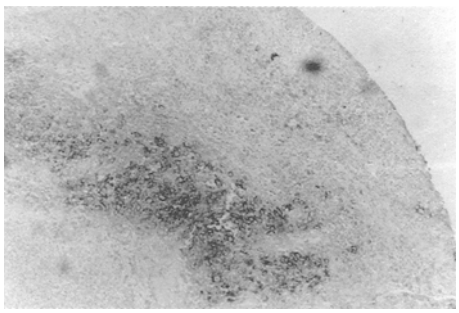

Fig. 2. Positive cells staining for PR in NPC (S–P method × 10)

RESULTS

ER and PR Positive Situation

The ER positive rate was 44.8% (26/58) and PR positive rate was 48.3% (28/58). There was no obvious difference of ER and PR positive rate on sex and age.

ER, PR, Staging and VCA-IgA

It is shown in Tables 1, 2.

The Accorded Rate of the Judgment of Staging by Measuring both of the Estrogen and Progesterone Receptors and VCA-IgA Titer

When VCA-IgA≥1:40, IV stage was 39.4% (13/33).

When ER (-), PR (-), IV stage was 31.6% (12/31).

When ER (-), PR (-) and VCA-IgA≥1:40, IV stage was 75% (9/12).

The Influence of Recent Therapy Were Effected by Measuring the Estrogen and Progesterone Receptors and VCA-IgA Tiger

Total CR (cure rate) was 77.6% (38/49). When both ER and PR were positive, CR was 79% (15/19); when both ER and PR were negative, CR was 68% (13/19); when ER and PR were negative and VCA-IgA=1:40, CR was 58.3% (7/12).

Table 1. The relationship between the estrogen and progesterone receptors and clinical staging

Clinical stage	ER positive rate	PR positive rate	*P*
II–III	53.8% (14/26)	50% (13/26)	
IV	37.5% (9/24)	41.7% (10/24)	>0.05
Recurrence	25% (2/8)	62.5% (5/8)	

Table 2. The relationship between estrogen and progesterone receptor rate and VCA-IgA titer

VCA-IgA titer	ER positive rate	PR positive rate	*P*
<1:40	53.8% (7/13)	53.8% (7/13)	>0.05
≥1:40	34.6% (9/26)	42.3% (11/26)	

DISCUSSION

The estrogen and progesterone receptors are a kind of growth hormone. They can make target cells producing structral protein and enzyme and stimulate cells proliferation and differentiation. The contents of estrogen and progesterone receptors can influence tumor's occurrence and growth.[1] Recent studies also indicated that estrogen and progesterone receptors are present in non-hormone-dependent tumor.[2] So it is quite important to study the level of estrogen and progesterone receptors in tumor.

NPC is high incidence in south China. Whether it has estrogen and progesterone receptor and it can be treated by endocrine method had become a heat spot in the study of NPC. Our data showed that ER and PR positive rate in NPC were respectively 44.8% and 48.3%. It closed to 60% and 45% in breast cancer,[3,4] 50% in laryngeal cancer, 60% in thyroid cancer,[5] and higher than 28%–35% in esophageal cancer and gastric cancer. So NPC should be classi-fied in the kind of tumor in which the level of ER and PR is high. The ER and PR of NPC had no relation with age and sex, but it is inverse ratio to the clinical staging and VCA-IgA titer. This indicated that the level of receptor occurrence and growth of NPC. When we judged IV stage patient with NPC, VCA-IgA was 1:40, accorded rate was 39.4%; both ER and PR were negative, accorded rate was 31.6%; ER and PR were negative while VCA-IgA=1:40, accorded rate was 75%. We came to a conclusion that the accuracy is the highest in combining measure three items. The total CR in our article was 77.6%. When both ER and PR were negative, CR was 68%. When both ER and PR were negative while VCA-IgA=1:40, CR decreased to 58.3%. We regarded that the level of receptor of hormone can affect the therapy result. It is suggested that NPC also belongs to tumor with high esteron and progesterone receptor level and can be treated by endocrine method.

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