

Evaluation of P53 in Salivary Glands Tumors among a Syrian Sample

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Abstract: Objective: to evaluate the expression of P53 in salivary glands tumors among a Syrian sample. Material and methods: a retrospective analysis of gross and light microscopic features 50 salivary glands tumors that were treated and diagnosed at Almoasat hospital, the main hospital in Damascus. Only benign salivary glands tumors were included in this study, mainly pleomorphic adenoma and warthin's tumor. Results: 158 cases were studied from 2009 to 2016. Pleomorphic adenoma was the most occurring tumor (47.7%), followed by Warthin tumor (30.9%) and mucoepidermoid carcinoma (6.1%). Lesions of in minor salivary glands compromised (11.03%). Only pleomorphic adenoma and warthin's tumor were included in the practical part of the study. All specimens showed a total negativity for P53 when they were studied under the light microscope. Conclusion: the result of this study agreed with some previously studies in other countries and was not similar to others in other countries. No differences were observed as to the type of the tumor. These results could be related to racial factors.

Key words: Salivary glands, lesions, Syria, P53.

1. Introduction

P53, guardian of the genome, plays an essential role in the development of many of the human tumors. And it is the most detected aberrations in any neoplasm [1-4].

In SGTs (salivary glands tumors), it is used as a remarkable marker in distinguishing between benign and malignant tumors [5-11].

Although its expression differs from in populations, it still has a notable importance in the diagnosis of malignant tumors. It reveals a kind of positivity in malignant salivary glands tumors, while it is still under debate as to its expression in the benign ones [12-15].

The nuclear expression of mutant P53 was studied in benign SGTs (mainly, pleomorphic adenoma and warthin's tumor).

The aim of this study was to evaluate the expression of P53 in salivary glands tumors in a Syrian sample.

2. Materials and Methods

It is an immunohistochemical study. Data were collected from Almoasat Hospital, Department of Pathology. All patients with salivary gland lesions were included in the study. Patients with salivary gland lesions who were diagnosed as inflammatory lesions on FNAC and did not go for surgery were excluded from the study, since no histopathological material was available for follow-up study. Also recurrent and metastatic tumors were excluded.

Patients record from January 2009 to December 2016.

Total 158 cases were studied. Data were recorded as patient's age and gender as well as site of involvement and final histopathologic diagnosis according to the patient's medical records. Microscopic examination was done with H&E staining. Salivary gland tumors were classified based on the 2005 WHO classification.

2.1 P53 Immunostaining

Paraffin embedded section from 50 benign salivary glands tumors (pleomorphic adenoma and Warthin's tumor) were taken on slides and baked at 45 °C

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overnight in incubator. Slides were given three changes of xylene (5-10 minutes each), two changes of 100% ethanol (2 minutes each), two changes of 95% ethanol (2 minutes each), two changes of 70% ethanol (2 minutes each). Slides were rinsed in distilled water for 5 minutes. Endogenous peroxidase was blocked in 15% H₂O₂ for 10 minutes. Then slides were rinsed with tap water for 5 minutes.

2.2 Staining Procedure

Slides were placed in plastic container with citrate buffer. They were cooked for 10 minutes at full pressure for 10 minutes. The container was taken out when it cooled. Slides were washed in distilled water. Primary antibody dilution in 1% BSA is added. Slides were incubated overnight at room temperature. Then slides were rinsed in phosphate buffered saline (3 changes solution) the secondary antibody was added in 200 dilutions in phosphate buffered saline. Slides were incubated for 30 minutes. Then they were rinsing in phosphate buffered saline for 5 minutes. Streptavidin horse raddish peroxidase was added for 30 minutes. After rinsing in 3 changes of phosphate buffered saline of minutes the slides were incubated with diaminobenzidine bluing dehydrated in alcohol, clear in xylene and were mounted with haematoxylin bluing dehydrated in alcohol, clear in xylene and were mounted with DPX observed light microscope.

2.3 Grading for P53 Staining

We reported the negativity if there was no staining. We recorded the nuclear or cytoplasmic staining.

Data were presented as a frequency table.

3. Results

We observed 158 cases of salivary glands lesions. The overall frequencies of benign and malignant tumors were 62.02% and 9.49% (respectively), while the inflammatory lesions compromised 28.48%. PA (Pleomorphic Adenoma) was the most frequency occurring tumor, 34.1% of all cases and 55.1% of

benign tumors. MEC (Mucoepidermoid Carcinoma) was the most frequently malignancy (46.6%). Warthin tumor was the second most common benign tumor (35.7%), followed by basal cell adenoma (4.08%).

The peak age of incidence was the third and the fourth decades (38.35%).

All slides showed a total negativity for P53. Neither the pleomorphic adenoma nor Warthin's tumor had any degree of positivity for P53 in this study.

4. Discussion

This study revealed the expression of P53 in benign salivary gland tumors in Damascus, Syria (Pleomorphic adenoma and Warthin's tumor). Cases were taken from the main hospital in Damascus (Almoasat) and diagnosed according to the 2005 WHO classification over a nine year period.

It was noticed that none of the specimens had any nuclear staining of P53.

This result was similar with the study of Nordkvista et al. [15].

On the other hand, our results are in contrast with other studies that revealed positivity in pleomorphic adenoma Kärjä et al. [13].

The results herein also are in contrast with Weber et al. study that revealed a 10% positivity of P53 in pleomorphic adenoma [6].

To be concluded, the results presented in this study were similar to the previously published reports in some countries. However, some differences were observed. These differences can be attributed to the racial and environmental factors which may contribute to positivity of P53 in some population and negative in other.

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