MMUNOHISTOCHEMICAL EXPRESSION OF MDM2 IN ODONTOGENIC TUMORS

by

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Dissertation Submitted to the
Rajiv Gandhi University Of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

Master of Dental Surgery (M.D.S.)

in

Department Of Oral Pathology and Microbiology

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Dharwad

2006

ABSTRACT

BACKGROUND

Recent studies on odontogenic tumors have identified various molecular alterations responsible for their development and determination of epithelial proliferation is useful means of investigating differences in biologic behaviour of these tumors. One such specific marker to identify proliferative activity and tumor aggressiveness by immunohistochemistry (IHC) is MDM2 a 90-95kDa protein.

A single study has been done so far assessing MDM2 in ameloblastomas and AOT, correlating its over-expression with higher proliferative activity exclusively in ameloblastomas. Hence, this study was undertaken to offer new clues to understand better the diverse biological activity between these two groups of odontogenic tumors based on their cell proliferation activity.

OBJECTIVES

I. To study the expression of MDM2 in odontogenic tumors like ameloblastomas and AOT.

II. To compare its expression between ameloblastoma and AOT.

METHOD

A total of 50 cases, comprising of 36 ameloblastomas and 14 AOTs were subjected to heat induced antigen retrieval method using citrate buffer in pressure cooker. Consequently the sections were stained with MDM2 monoclonal antibody and visualized using LSAB+ kit.

RESULTS

The predominant nuclear staining by MDM2 revealed over-expression in ameloblastomas as compared to AOTs. In ameloblastomas, statistically significant association was seen between plexiform ameloblastomas, follicular ameloblastomas with granular cell changes, desmoplastic and unicystic variants.

INTERPRETATION AND CONCLUSION

Higher expression of MDM2 in plexiform and follicular ameloblastoma with granular cell changes as compared to desmoplastic and unicystic plexiform ameloblastomas suggests a divergent epithelial proliferative activity within these types and helps to elucidate the difference in their biologic behaviour. Similarly, a higher expression noted in ameloblastomas when compared to AOTs is indicative of differences in the aggressive nature between these two groups of odontogenic tumors favoring the perception of a greater aggressive nature of ameloblastomas.

Key Words: MDM2; Cell cycle; Odontogenic tumors; Ameloblastoma; Plexiform ameloblastomas; Follicular ameloblastomas; Follicular ameloblastoma with focal granular cell changes; Acanthomatous ameloblastomas; Desmoplastic ameloblastomas; Unicystic ameloblastomas; Adenomatoid Odontogenic Tumors.