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Comparative immunohistochemical analysis of Beclin-1 & MDM-2 in benign and malignant ameloblastomas

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Background: A meloblastoma is the most frequently encountered neoplasma rising from the odontogenic epithelium. Beclin-1protein plays a critical role in autophagy as a tumor suppressor gene. Whereas, the Murine Double Minute 2 (MDM-2) is a cellular proto-oncogene capable if amplified of causing tumor-genesis. The expression and prognostic significance of both genes are largely unexplored yet in this neoplasia. Therefore, the present investigation aimed to assess their possible biological role in ameloblastomas.

Methods: This study was done among 35 studied cases: 29 cases of benign ameloblastomas and 6 cases of ameloblastic carcinomas. Labeled Streptavidin Biotin (LSAB+Dako) immunohistochemical method utilizing monoclonal antibodies for Beclin-1 & MDM-2 genes was used.

Results: Most of the benign ameloblastomas showed intense total cell positivity for the Beclin-1while, the ameloblastic carcinomas revealed mild to negative expression. Inversely, the MDM-2 oncoprotein demonstrated intense brown total cell reactivity in amelobastic carcinoma and loss of the reaction to mild brown stain in benign ameloblastoma.

Conclusion: Based from these findings, one could conclude that MDM-2 could be a specific marker to identify the proliferative activity, tumor aggressiveness and directly proportional with the degree of malignancy. In contrast, the high Beclin-1expression could be a good indicator of prognosis in ameloblastomas. Hence, an overall comparison both studied genes may be very promising molecular prognostic biomarkers.

Biography

M A El- Barrawy is currently working on Alexandria University, Egypt. He is having experiences on various investigations of Microbiology (Bacteriology, Virology and Mycology), Immunology, Clinical Pathology, Histocompatibility, and field surveys (Public health microbiology). He was a Post-doctoral fellow of M.D. Anderson Cancer & Tumor Institute, Texas University (Houston, USA) from October 1988-April 1989. His research activities are Tissue Typing (Class I & II), Mixed lymphocytic culturing (For bone marrow and organ transplantations), DNA probing and hybridization, Blood banking standards and investigations, AIDS confirmations, etc.

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