



SKIN CANCER (OTHER THAN MELANOMA)

THE ROLE OF CATHEPSIN K IN EPIDERMAL TUMORS: AN IMMUNOHISTOCHEMICAL STUDY.

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Background: Cathepsins are a class of proteases that can degrade components of the extracellular matrix. Cathepsins are highly expressed in various human cancers and their role in tumor progression is well documented. Cathepsin K is a member of this family with strong collagenolytic and elastolytic activity. The aim of the study is to assess and compare the expression of cathepsin k protease in benign e.g. seborrheic keratosis (SK), premalignant e.g. actinic keratosis (AK) and invasive cutaneous tumors e.g. basal cell carcinoma (BCC) and squamous cell carcinoma (SCC).

Materials and Methods: The study included 45 participants divided into five groups: one control group (9 normal skin specimens) and four case groups (9 patients with SK, 9 patients with AK, 9 patients with BCC and 9 patients with SCC). The diagnosis was confirmed with clinical, histological and dermoscopic examination. All skin biopsies were subjected to immunohistochemical stain of cathespin K.

Results: The epithelial and stromal scores of cathepsin K were significantly higher in all epidermal tumors compared to the control group. There was a high statistically significant difference (p< 0.001) between the mean epithelial and stromal scores of the non-invasive tumors group (SK, AK) and the invasive tumors group (BCC, SCC). There was a positive correlation between cathepsin K activity and the tumor grade in SCC.

Conclusions: Cathepsin K has a significant role in epidermal tumor invasion and increased expression is correlated with more aggressive tumors. The peritumoral stroma is an active contributor in tumor invasiveness. Cathepsin K inhibitors can be a promising therapeutic line for the treatment of cutaneous tumors.





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