

**IMMUNOHISTOCHEMICAL EXPRESSION OF  
E-CADHERIN AND BETA-CATENIN IN PSORIASIS**

**Thesis**

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## **Abstract:**

**Background:** Psoriasis is a common inflammatory skin disease characterized by abnormal keratinocyte proliferation and differentiation, both E-cadherin and  $\beta$ -catenin are important for epidermal intercellular adherence in addition  $\beta$ -catenin also acts as a transcription factor as part of the Wnt signalling pathway.

**Objectives:** To assess the presence and distribution of E-cadherin and  $\beta$ -catenin in psoriasis in order to investigate their possible role in the pathogenesis of psoriasis.

**Patients and Methods:** Thirty patients having psoriasis vulgaris were recruited from the outpatient clinic, dermatology department. Faculty of Medicine, Cairo University as well as twenty (age and sex matched) volunteers (psoriasis free) with healthy skin appearance (as a control group). All patients were subjected to complete history taking with special emphasis on the duration of the disease, dermatological examination and registration of PASI score. Both patients and controls underwent skin biopsy. H& E staining was performed for histopathological examination and a grading system with a numerical value assigned for each biopsy was taken from all cases. Immunohistochemical staining was performed to detect both membranous E-cadherin and  $\beta$ -catenin expression and distribution in both cases and control groups.

**Results:** There was a highly significant difference between cases and control group regarding to immunostaining of both E-cadherin and  $\beta$ -catenin in each of (granular, upper spinous, and basal skin layers) with high mean among control, and no significant difference in immunostaining between study groups regarding (lower spinous layer). There was a highly significant negative correlation between the used histologic grading score and immunohistochemical staining of both E-cadherin and  $\beta$ -catenin in all skin layers. There was no significant correlation between the duration of disease and the immunohistochemical staining of both E-cadherin and  $\beta$ -catenin in different skin layers. Similarly the PASI score did not correlate

with the immunohistochemical staining of both E-cadherin and  $\beta$ -catenin and the used histologic grading score.

**Conclusion:** In psoriasis there are alterations in the organization of adherence junction proteins especially E-cadherin and  $\beta$ -catenin, and these alterations could contribute to modify interactions between neighboring cells, leading to inadequate function of the epithelial skin layers, and also enhance the proliferative activity in the affected epidermis.

**Key words:** psoriasis vulgaris, E-cadherin,  $\beta$ -catenin