

High prevalence and density of *Demodex folliculorum* infestation in periocular basal cell carcinoma quantified by PCR

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Aim: To quantify *Demodex folliculorum* in the periocular region and establish a possible relationship between basal cell carcinoma (BCC) and the density of the mite as quantified by polymerase chain reaction (PCR).

Material & Methods: Design: Retrospective case-control study. Participants: Periocular tissue specimens were obtained in 64 patients with BCC and in 51 control subjects with similar benign lesions who had undergone surgery at the Hospital Juan Ramón Jiménez (Huelva, Spain) over the period 2009 to 2015. Methods: The density of *D. folliculorum* was determined in the biopsy specimens for each periocular zone by quantitative real-time PCR.

Main Outcome Measures: Number of amplicons (DNA copies) of *D. folliculorum* per mg of solid sample.

Results: Demodex was significantly more prevalent in the patients with BCC than in those with benign lesions: 42.4% vs 19.6% (odds ratio 2.99; 95% confidence interval (CI) 1.27 – 7; p = 0.010). Prevalence in the nodular BCC subgroup was also significantly higher than in controls: 51.1% (odds ratio 4.28; 95% CI 1.73 – 10.59; p = 0.001). Infestation density was higher in the patients with BCC (p = 0.008) and in the nodular BCC subgroup (p = 0.001) than controls. BCCs of the inner canthus and lower eyelid showed a greater presence of the mite compared with controls (p = 0.023 and p = 0.036 respectively).

Conclusion: Patients with periocular BCC show a higher prevalence and density of *D. folliculorum* than those with benign lesions at this site.