

Occurrence of infection with *Demodex folliculorum* and bacteria

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The ectoparasite *Demodex* sp. is the most common human parasite, detected in skin lesions such as rosacea, lichen and keratosis. It is also an etiological factor of blepharitis. As *Demodex* sp. are involved in the transmission of pathogens that can play a key role in the pathogenesis of demodicosis, the aim of the study was to assess the concurrence of infection with *Demodex* sp. and bacteria.

Our study was carried out on 232 patients, including 128 patients infected with *Demodex folliculorum* (16–90 years of age) and 104 non-infected patients (3–81 years of age) from Poland. This study conforms to the principles outlined in The Declaration of Helsinki as revised in 2008. The study ran from October 2015 to May 2018 and was approved by the Bioethics Committee of the Pomeranian Medical University in Szczecin (KB-0012/82/15). The subjects who participated in the study were informed about the course of the study and agreed to take part in it.

The material for microbiological tests was collected from the conjunctival sac with a sterile swab and AMIES transport medium. Samples were plated on basic microbiological media: Columbia agar with 5% sheep blood, Chapman, Mc Conkey and Sabouraud, and then incubated at 37°C for 24 hours. Strains were identified based on the morphological evaluation of the colonies on the media and preparations stained by the Gram method.

Physiological flora was found in all patients *D. folliculorum* infected and 9 (8.7%) participants from the control group. *Acinetobacter baumannii*, *Streptococcus pneumoniae*, Gram-negative bacteria and *Bacillus* sp. were found in individual patients from the study group.

The research is complemented by data on the assessment of the prevalence of the parasite *Demodex* sp. in patients with blepharitis and its function as a vector organism.

The treatment of each patient should be individualized, adapted to the clinical condition, and in cases of bacterial co-infection, an antibiotic and/or a topical steroid drug should be additionally used, and daily hygiene of the eyelid margins should be recommended.