Scalp psoriasis associated with *Malassezia* species

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Objectives

Scalp involvement in patients with psoriasis is one of the most frequent manifestations of the disease. The role of *Malassezia* species in psoriasis is still undetermined. These lipophilic yeasts may be a trigger factor. The aim of the study was to investigate the presence of *Malassezia* species colonization in scalp lesions of patients with psoriasis and to determine its dependence on the size of lesions.

Methods

A prospective study of 144 patients with scalp psoriasis observed at the Department of Dermatology in Mycological Clinic during the period 2013 – 2017 (Fig. 1). 46 men and 98 women aged 18 - 74 years were examined. The patients were divided into two groups: (I) those in whom psoriatic area of the scalp was 10% - 29% of the whole scalp surface (34), and (II) in whom psoriatic area of the scalp was 30% - 89% (110). All patients were evaluated for the presence of *Malassezia* species on the scalp lesions. Scrapings from the surface of the scalp lesions and strips of cellophane tape containing clinical specimens from patients were investigated by direct fluorescent microscopy with Calcofluor White (Fig. 2) and by culture on the modified Leeming and Notman agar (mLNA) using contact plates for surface microbial sampling [Chander J., 2017].

Results

Malassezia spp. were detected in 83% (119) of patients. Both tests (direct microscopy and culture) were positive in 61% (88) of patients. Cultures were positive in 82% (98) of cases (Fig. 3). Monoculture *Malassezia* spp. was identified in 85 patients (71%), association with *Candida* sp. in 5 patients, association with *Rhodotorula* sp. – in 8 patients. *Malassezia* species were found in 12% of the I group patients and in 76% of the II group patients. The prevalence of *Malassezia* species according to the severity of the scalp involvement differed significantly ($p < 0,001$).

Conclusion

Thus, frequency of *Malassezia* species presence on the scalp increases with the enlargement of the psoriatic area. At follow-up we recommend laboratory investigations for the presence of *Malassezia* species in lesions of patients with scalp psoriasis twice a year.

Fig. 1. Patient with scalp psoriasis.

Fig. 3. Contact plates with growth of *Malassezia* sp. colonies on mLNA: a – healthy skin area on the scalp; b – psoriatic area on the scalp of the same patient.

Fig. 2. Direct fluorescent microscopy of skin scrapings from patients with scalp psoriasis: a – round yeast cells; b - elongated yeast cells; c - yeast cells inside sebum lipid droplet.