

TERBINAFINE LEVELS IN HAIR-SAMPLES OF CHILDREN WITH MICROSPORUM CANIS SCALP INFECTION

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ABSTRACT

Eighteen children, aged 2-11 years, with *Microsporum canis* scalp infection were treated with terbinafine orally for 6-16 weeks according to body weight. We studied the levels of terbinafine in the hair samples with HPLC (high-pressure liquid chromatography) at the end of treatment and again 1 and 2 weeks later. Hair samples were obtained by shaving the same area of the scalp. The cultures were made simultaneously. The concentration of terbinafine expressed in ng/10mg of hair weight was correlated with the result of culture (positive-negative). Eleven of 18 children had all cultures negative and the treatment was successful. The median value of terbinafine concentrations were 337ng/10mg of hair, at the end of the therapy, 378ng/10mg hair one week later, and 56ng/10mg hair two weeks later. Seven of 18 children had all cultures positive and treatment was not successful. The median values of terbinafine concentrations were 15ng/10mg of hair at the end of treatment, 5ng/10mg of hair one week later and, 7ng/10mg of hairs 2 weeks later. The concentrations of terbinafine were much higher in the group of patients, in whom the therapy was successful, although there were no differences in the age, dosage of the drug and duration of the treatment. The reasons for differences are not known and may have appeared due to lower sebum output in some patients. *Microsporum canis* may need much higher levels of the systemic antifungals at the site of infection for complete cure. The determination of drug levels in the target tissue and its correlation with cultures may be a useful method of evaluating the in vivo effect of systemically administered antifungals.

KEY WORDS

terbinafine level, *Microsporum canis*, tinea capitis, children

INTRODUCTION

Microsporum canis (*M.canis*) has been the most frequent dermatophyte isolated in Slovenia since 1989 (1). The majority of patients with microsporiasis are children and scalp infection appears in 7% of these patients (2). *Microsporum canis* causes scalp

lesions with slight erythema, scaling and broken-off hairs. Typical inflammatory lesions occur rarely.

Topical treatment of tinea capitis is usually ineffective; years ago oral griseofulvin was the only systemic antifungal agent available for tinea capitis. In the treatment of *M. canis* tinea capitis griseofulvin in the dosage of 10 mg/ kg/day usually for 23 weeks

