and placebo, the active preparation was found to produce a statistically significant improvement after only 11 patients.

In the comparison between budesonide 0.025% and fluocinolone acetonide 0.025%, the former preparation was significantly superior to the latter after 1 and 2 weeks.

In the comparison between budesonide 0.010% and fluocinolone acetonide 0.025%, no statistically significant differences in effect between the two ointments were demonstrated after 1 and 2 weeks.

DISCUSSION

The first part of the study demonstrated that 0.025% budesonide ointment had a marked clinical effect on psoriasis after 1–3 weeks of treatment, giving a statistically significant better effect than placebo in a series of only 11 patients, evaluated with sequential analysis.

The second part of the investigation showed that 0.025% budesonide ointment was more potent than the reference substance, fluocinolone acetonide 0.025% in its commercial composition (Synalar®). This is well known to be a very effective topical steroid preparation (1). When the concentration of budesonide was lowered to 0.010%, its effect was still at the same level as the 0.025% fluocinolone acetonide ointment.

The results suggest that budesonide is the first very potent non-halogenated steroid for topical use. The halogen substitution in the steroid nucleus is thus not mandatory for high topical activity if an optimal substitution is introduced in the 16α, 17α-position.

The introduction of halogen reduces the rate of oxidative biotransformation (7). *In vitro* experiments on rat liver have shown that budesonide is biotransformed more rapidly than the halogenated 16α, 17α-acetal triamcinolone acetonide (8). This could explain the fact that budesonide in animal models has caused relatively less systemic corticoid activity than has halogenated 16α, 17α-acetal steroids (9).

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Metronidazole and *Demodex folliculorum*

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Abstract. In vitro survival of *Demodex folliculorum* was tested in the presence of various concentrations of metronidazole (Flagyl). Demodex was found to survive in

Table I. *In vitro survival of Demodex folliculorum in presence of various concentrations of metronidazole*

Metroni-dazole (μg/ml)	Survival *Demodex folliculorum*	Control	Treated
1	2	105	95
2.5	2	195	195
10	2	60	95
1000	2	0	225

concentrations of as much as 1 mg/ml. Thus, it seems unlikely that the effect of metronidazole on rosacea is attributable to its direct activity on the mite.

Key words: Metronidazole; Rosacea; *Demodex folliculorum*

Metronidazole (Flagyl) (M) has proved to be effective in the treatment of papulo-pustular rosacea (1, 2) though the mechanism of sits action remains unknown. It has recently been suggested (2) that M may be effective against *Demodex folliculorum*, the parasite which is present in large numbers in hair follicles and scales of rosacea patients.

We have therefore tested in vitro the capacity of *Demodex* to survive in the presence of various concentrations of M.

METHOD

Demodex were collected from hair follicles and scales of rosacea patients, placed in a drop of saline with or without M and kept at room temperature. The degree of motility was monitored every 5 min and regarded as a sign of viability of the acarus.

M concentrations were used according to the plasma level reached during ordinary use of the drug. Two excess concentrations were also used.

RESULTS

The results are shown in Table I.

DISCUSSION

Demodex was found to survive in the presence of as much as 1 mg/ml of M, a concentration which cannot be reached in vivo, even in blood.

Although it cannot be excluded that M acts through some of its metabolites, its direct action on *Demodex folliculorum* would seem unlikely.

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