Current Practice

TODAY'S DRUGS

With the help of expert contributors we publish below notes on a selection of drugs in current use.

Tolnaftate

Tolnaftate is marketed by Glaxo Laboratories Ltd. under the name Tinaderm.

Although the use of griseofulvin has revolutionized the treatment of some types of fungus infections of the skin and its appendages, there still remains a great need for a really efficient topical fungicide. Over the years a large number of preparations have been introduced, many of which have a potent in-vitro action, but in clinical practice they have been found to have little advantage over the other preparations, and indeed benzoic acid ointment *B.N.F.* is still one of the most commonly prescribed preparations.

Tolnaftate was synthesized by a group of Japanese workers[1] and has been used in the U.S.A. for the past four years; the clinical results seem promising.

Chemistry and Pharmacology

Tolnaftate is the approved name for 0-2-naphthyl *N*-methyl-m-tolylthiocarbamate. It is a colourless and odourless compound, soluble in organic solvents but almost insoluble in water. Most of the original clinical work was carried out with 1% solution in polyethylene glycol, but tolnaftate is now marketed as a 1% cream and 1% powder under the name of Tinaderm.

The in-vitro activity has been the subject of a number of reports.[2,3] The minimum inhibiting concentration in μg./ml. is between 0.08 and 0.008 for four common ringworm fungi, *Trichophyton mentagrophytes, T. verrucosum, Epidermophyton floccosum,* and *Microsporum canis,* and it is 3.0 for *T. rubrum.* There is no significant effect against *Candida albicans,* some species of aspergillus, or bacteria.

Massive doses in animals have shown no toxicity,[4] and Goldman and Lasser[5] could not demonstrate any adverse effects in seven patients treated for seven consecutive days with 1% tolnaftate lotion applied to 90% of the body surface. Rostenberg[6] was unable to sensitize 54 subjects, and the clinical reports do not mention cases where sensitization or a primary irritant effect has been noted.

Clinical Studies

Robinson and Raskin[7] treated 185 patients with superficial fungus infections and reported improvement in 173 after two to four weeks' treatment. This included 128 cases with *T. rubrum* infection, 124 of which were improved, but it is noted that cases with palmar and plantar lesions did not clear completely. Many other trials have been carried out, including those of Leer,[4] who described 520 patients with 73% showing clearing or improvement, Neuhauser,[8] who treated 100 patients with 86% clearing or improved, and Erve[9] reporting 176 cases, 25 of which had *T. rubrum* infection, and 23 of these showed a good response. Gould[10] treated 86 patients, including 40 in a double-blind study; twice as many sites cleared with tolnaftate cream as with the placebo. A double-blind technique was also used by Adam and Craig[11] on 29 patients, 82% of whom showed clearing or great improvement after three weeks' treatment.

Discussion

From all these reports it seems that tolnaftate is effective in the common ringworm fungus infection of the toes and groins and skin elsewhere. It has no worth-while action on nail ringworm and it is doubtful whether it helps much in scalp ringworm. The clinical results in tinea versicolor (*Malassezia furfur*) are good. It has no effect on *Candida albicans* infections, and this limitation will need stressing, as otherwise it will be used in chronic paronychia and other conditions associated with this fungus. It would thus seem that many of the cases where tolnaftate is most effective are those which usually respond readily to the older fungicidal applications. However, *T. rubrum* infections have often proved difficult to clear, and tolnaftate may well have an important place in their management, particularly in the toe-web and groin infections. The widespread scaling of hands and feet which this fungus infection sometimes causes does not respond so readily, and Wethered, Heeler, and Warin[12] in a double-blind paired comparison in such patients were unable to demonstrate any clinical or mycological effect after treatment with tolnaftate cream for one month. Another important aspect of management of fungus infection is the tendency to recurrence after treatment is discontinued. Erve[9] reports no recurrence during 10 months' observation, but Robinson[3] mentions two cases which recurred after apparently successful treatment with tolnaftate. The period of treatment required in each type of case is likely to be determined only when more experience of the drug has been obtained. In most of the clinical reports two to four weeks' treatment has been sufficient, but some conditions may well require longer.

Dosage and Cost

Tolnaftate is available as Tinaderm in 1% powder 1% cream. It should be applied once or twice a day.

The basic N.H.S. cost of 15 g. of cream is 3s. 9d. and of 50 g. of powder is 4s. 6d.

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