

Cycloheximide in Dermatology

Sir,

Although cycloheximide (CHM) or Actidione[®], isolated from *Streptomyces griseus*, is an antibiotic widely employed in the laboratory, its clinical use has been limited. Because of the great deal of information which indicates that this drug has therapeutic value as a topical agent, we wish to present the dermatological data presently available. Its molecular formula is $C_{15}H_{23}NO_4$.

BIOCHEMICAL PROPERTIES

CHM inhibits the synthesis of protein and DNA (1). The inhibitory effects on mammalian cells are reversible, often a desirable property from a therapeutic standpoint. CHM specifically inhibits the function of 80S ribosomes and enhances the endotoxin-induced production (superinduction) of interferon (2).

MEDICAL USE

CHM has been administered intramuscularly, intravenously and intrathecally to treat mostly cryptococcosis patients in daily doses ranging from 10 mg to 60 mg. One patient received 2,681 mg intramuscularly in one day without toxicity. A total of 175 individuals have received the drug with excellent tolerance.

DERMATOLOGICAL USE

Psoriasis

Topical CHM (0.1–0.2%) dispersed in Aquaphor[®] produces involution of psoriatic plaques (3). In our clinic a phase-II double-blind, tolerance-efficacy comparison of CHM versus vehicle applied b.i.d. showed a statistically significant superiority of CHM over the vehicle. There was no systemic or local toxicity.

In the national multicenter cooperative study undertaken by Weinstein and twelve other leading U.S.A. investigators (4) to evaluate the clinical effectiveness of 30 topical anti-psoriatic agents, CHM was ranked among the seven leading compounds.

Cutaneous malignancies

Du Vivier (5) employed 1% CHM b.i.d. to treat actinic keratoses, superficial basal cell carcinomas and Bowen's disease.

Clinical and histopathological cure, including disappearance of lesions previously resistant to 5-fluorouracil, was observed.

Human papillomavirus

Plantar warts, verrucae vulgaris and condylomata acuminata were treated in our clinics with excellent response using 0.2% CHM dispersed in Aquaphor[®]. The ointment was rubbed b.i.d. with a cotton-tipped applicator until complete penetration was obtained or applied once daily under occlusion.

Porokeratosis

Shelley & Shelley (6) obtained dramatic improvement in the treatment of a linear porokeratosis which had resisted a large variety of therapies over 11 years, using 0.2% CHM in Aquaphor[®] once daily for 6 weeks.

COMMENTS

Although CHM has shown efficacy and lack of toxicity in a number of dermatological conditions treated by several investigators, it falls within the category of an orphan drug because it still lacks an approved indication. Performance of additional controlled topical trials in various dermatoses and Systemic evaluation in a number of diseases, especially viral infections, appear justified.

REFERENCES

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Accepted November 28, 1996.

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