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LETTER TO THE EDITOR

Topical Delivery of Acetazolamide for Psoriasis

Sir,

In a letter to Lancet (March 2, 1991, p. 558), Dr. D. J. Gawkrodger reported that acetazolamide, when given orally 1 g daily for 5 months, had had a beneficial effect on a patient with psoriasis. We decided to try acetazolamide on psoriasis, externally, in a cyclodextrin gel formulation. Cyclodextrins are capable of forming inclusion complexes with a wide variety of hydrophobic drugs, thus enhancing their absorption from the skin. The acetazolamide hydrogel was prepared according to a previously described method (2) and consisted of acetazolamide (1.3%), 2-hydroxypropyl-β-cyclodextrin (10%), sodium carboxymethyl cellulose (3.5%), benzalkonium chloride (0.05%) and disodium edetate (0.05%) in water. This hydrogel was a clear solution of the drug and excipients in water. The release of acetazolamide from the hydrogel preparation was evaluated and found to be about 10 times faster than that from a comparable acetazolamide o/w cream preparation (3), so it was reasonable to conclude that fairly large amounts of acetazolamide would reach the basal cell layer of the epidermis, where the cell division occurs.

Six patients with psoriasis (plaque form) of relatively long standing and a mean age of 30.5 years were treated with acetazolamide in a cyclodextrin gel formulation. The patients received no other treatment of any kind while this trial was going on. This was carried out in Sept.–Nov. 1991 in Iceland. At that time the sun does not interfere with the treatment.

The gel was applied twice daily for 4 weeks and then continued for another 4 weeks if the patients had shown any positive results. All patients were photographed before and after 4 and 8 weeks when applicable.

Five patients showed no beneficial effect after using the acetazolamide gel for 4–6 weeks and asked to be given another treatment, but one patient had a total clearance after 8 weeks. This patient had had psoriasis plaques of 1–3 cm diameter on his legs for approximately 2 years prior to this trial. Three of the patients complained of dryness of the skin where the gel was applied but no other side-effects were noted.

We concluded that acetazolamide in a cyclodextrin gel formulation had little or no effect on psoriasis when used externally. Nevertheless it is possible that oral delivery might be effective for example due to formation of active metabolites in vivo.

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J. H. Ólafsson[1], T. Loftsson[2] and H. Fridriksdóttir[2]. Departments of [1]Dermatology and [2]Pharmacy, University of Iceland, Reykjavik, Iceland.