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Effect Of Acyclovir + 348U87 Cream On Solar Simulator Induced Herpes Simplex Labialis. D.I. Bernstein, L.A. Rheins, R. Beitman, J. Delehanty. J.N. Gamble Inst. Med. Res., Hilltop Research, Cincinnati, OH and Burroughs Wellcome Co., Res. Triangle Park, N.C.

Initial studies using a calibrated 1000 watt xenon arc light source filtered with an UVC blocking filter plus visible and infrared radiation blocking filters were performed to induce HSV labialis in volunteers. Thirty-three healthy volunteers with a history of recurrent HSV labialis received 3-4X the minimal erythema dose (MED) to one quadrant of the perioral area. At a dose of 3MED, 13 of 34 (38%) subjects developed typical culture (+) HSV labialis. Using this model, a randomized, double blind, placebo controlled trial of a cream combination of acyclovir (5%) and 348U87 (3%) was conducted in fifty-one subjects. 348U87, a semithiohydrazone, is a potent inactivator of HSV ribonucleotide reductase, but a weak inactivator of human ribonucleotide reductase. In vitro synergistic activity with ACV has been shown. The cream was applied beginning immediately after perioral UV exposure and continuing every two hours while awake. Treatment lasted for seven days. Twelve percent of treated subjects (3/25) and 15.4% of placebo recipients (4/26) developed HSV culture positive lesions within the area of irradiation (N.S.). Similarly, no significant differences in time to healing or crusting was detected. Although in vitro and animal data support the use of combined acyclovir and 348U87 treatment, the topical combination was not effective in this study in preventing or modifying UV induced herpes labialis. Further studies of 348U87 for the treatment of herpes labialis are planned.

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The natural history of experimental ultraviolet radiation(UVR)-induced herpes labialis, a human model of recurrent herpes simplex virus infection: Clinical, virologic and serologic observations following multiple exposures. S Spruance, M McKeough, T Evans, E Mishkin and A Abramovitz. Division of Infectious Diseases, University of Utah, Salt Lake City, Utah; and Lederle-Praxis Biologicals, Pearl River, New York, USA.

When volunteers with a history of herpes labialis are exposured to experimental UVR, 40-70% will develop a recurrent lesion. In anticipation of using this model to evaluate therapeutic intervention, we further studied the natural history of experimental disease by induction of herpes labialis three times at 3-4 month intervals in a group of 20 susceptible volunteers. Complement-independent serum neutralizing antibody titers(NEUT-AB) were determined on each patient at each session from immediate pre-exposure blood specimens. Immediately prior to the first session, samples of oral secretions were obtained by oral rinse with 5 ml trypticase soy broth and an aliquot was then incubated in tissue culture for viral isolation. The number of patients with lesions at each session was 9/20(45%), 9/20(45%) and 14/20(70%). 21 of 28 lesions sampled (75%) were virus culture-postive. Three patients never developed a lesion, 4 patients had a lesion during every session, and the remainder of the patients were inconsistent. Six of the thirty episodes(20%) were immediate lesions(developed within 48 hrs). No patient had more than one immediate lesion. Immediate lesions were not anteceded by shedding of HSV in oral secretions. The development of lesions correlated with frequency of sun-induced herpes but not age, sex, years with herpes or overall frequency of herpes. At the first and second sessions, but not the third, respectively, mean NEUT-AB were lower among patients who developed lesions(90 vs 140, p=.05; 110 vs 162, p=.02; 136 vs 142, p=NS).