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Prevention and Treatment of Experimental Genital Herpes Simplex Virus Type 2 (HSV-2) Infections with Topical HPMPC. J. Palmer, P.E. Vogt, and E.R. Kern. University of Alabama School of Medicine, Birmingham, AL, U.S.A.

The incidence of genital HSV-2 infections continues to increase and is a major health problem worldwide. Although Acyclovir has had a significant impact on the treatment or suppression of primary and recurrent disease, it has not altered the frequency or transmission of these infections. There is a need, therefore, for better methods of preventing transmission as well as treatment of genital HSV-2 infections. We have utilized guinea pigs inoculated intravaginally with HSV-2 to evaluate new antiviral therapies for genital herpes. In this model infection a single topical (intravaginal) application of 3% (S)-1-[3-hydroxy-2-(phosphonyl-methoxy)propyl] cytosine (HPMPC) 24h prior to HSV-2 inoculation prevented completely the infection of all animals as evidenced by lack of vaginal virus replication, development of external genital lesions, or recurrent infections. In animals already infected with HSV-2, a single treatment of 3%, 1%, or 0.3% initiated 24h after infection reduced significantly vaginal viral replication, lesion development, and viral replication within lesions. Only a marginal additional benefit was obtained if treatment once daily was continued for 3 or 5 days. These results indicate that prophylactic use of topical HPMPC can prevent HSV-2 infection of guinea pigs and suggests that this compound may be effective in reducing or preventing transmission of genital herpes in humans. These data also suggest that a single topical application is as effective as multiple doses for treatment of genital herpes.

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Evaluation of CRT Healing Components in two different Topically Treated Cold Sore Animal Models.

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The zosteriform mouse and HSV intravaginal guinea pig models were used to examine the ability of CRT (Triad) components to reduce lesion development, duration and severity. Mathematical modeling was used to determine the ratio and concentration of CRT components used in the studies. CRT is a patent -pending antioxidant formulation developed by Warner-Lambert Consumer Products R & D. CRT contains three components that work synergistically: vitamin E, sodium pyruvate, and 13 fatty acids. The MS strain of HSV-2 was utilized for intravaginal inoculation in the guinea pig model with approximately 1.2 x 10-5 plaque forming units. The guinea pigs were treated on the external genital skin four times daily for ten days beginning 48h post viral inoculation. SKH-1 male hairless mice were infected with 1 x 10-9 HSV-1 (McIntyre strain) on the dorsal surface of the mouse and treated with CRT formulations starting on the afternoon of the infection day, and treated for the following 14 days. In the Guinea pig model, several CRT formulas reduced lesion development, duration, and severity scores significantly compared to vehicle control, Blistex, and acyclovir. Acyclovir was the only compound that reduced viral titers. In the mouse model several formulas reduced clinical symptoms compared to the vehicle and Blistex. Several CRT formulations with 5% acyclovir were found to reduce lesion severity and duration better than 5% acyclovir in PEG.