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Antiviral Efficacy of Newer Antiviral Agents in Animals. E.D. Varnell, H.E. Kaufman, E. DeClercq, J.M. Hill, and R.P. Schinazi. LSU Eye Center, LSU Medical Center School of Medicine, New Orleans, LA 70112; Rega Institute, Leuven, Belgium; Emory University, Atlanta, GA, USA.

New, potent and highly selective drugs have been synthesized which are effective against a broad spectrum of DNA viruses and which are not dependent on viral-specified thymidine kinase (TK) for activity and may minimize the emergence of resistant viruses. These agents have been found effective in TK-deficient herpes, as well as against DNA viruses such as cytomegalovirus (CMV) and Epstein-Barr virus (EBV) which do not encode a specific viral TK. One of these agents, PMEA, 9-(2-phosphonylmethoxyethyl) adenine was studied in the rabbit against acute keratitis caused by the McKrae strain of herpesvirus. Eye drops of 0.2% PMEA, given 5 times a day from days 3 thru 8 were ineffective in altering the course of the keratitis whereas 1.0% PMEA had a slight effect when the drops were administered 5 times a day between the hours of 8 a.m. and 4:30 p.m. A schedule of treatment was also tested which spread out the treatments from 7 a.m. to 10 p.m. Other potent antiviral agents were tested, including FMAU (2'-fluoro-5-methyl-ara-U) and FEAU (2'-fluoro-5-ethyl-ara-U). Thus far, none of the drugs tested compares in efficacy to treatment with 1.0% trifluridine in this model.

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Effect of 1-(2'-deoxy-2'-fluoro-β-D-arabinofuranosyl)-5-ethyluridine (FEAU) on Herpes Keratitis in Rabbits. M.D. Trousdale*, T-L. Su, K.A. Watanabe and J.J. Fox. *Doheny Eye Institute, Los Angeles, CA. and Sloan-Kettering Institute, New York, N.Y., U.S.A.

FEAU, a potent antiviral drug, was evaluated in rabbits with acute herpes infection of the eye. Rabbit corneas were bilaterally inoculated with 3 x 10^5 PFU/eye of McKrae strain herpes simplex virus type 1 (HSV-1) without corneal scarification. Topical therapy with either 1%, 0.1% or 0.01% FEAU was given three times daily beginning on day 3 postinoculation (PI), when keratitis was first detected, and continued for seven consecutive days. The severity of corneal epithelial involvement was reduced within the first 24 hours of treatment with 1% FEAU and significant improvement continued during the period of chemotherapy. Results with 0.1 and 0.01% FEAU were intermediate when compared with a placebo drug and the 1% FEAU. Conjunctivitis was eliminated by the fourth day of therapy (day 6 PI) with 1% FEAU; no iritis was detected until day 6, and then only at a minimal degree of severity. Corneal clouding did not develop in animals undergoing this treatment. Duration of detectable virus shedding into the tears, colonization of trigeminal ganglia by HSV-1 and mortality rate were unaffected by therapy.