Poster Session III

Animal Models, Pharmacology, and Clinical Studies

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Ultraviolet Radiation (UV) Induced Recurrent Genital Herpes: An Animal Model for Evaluating Antiviral Treatment. L.R. Stanberry, C.J. Harrison, D.I. Bernstein. Division of Infectious Diseases, Children's Hospital Research Foundation, Cincinnati, Ohio, U.S.A.

The guinea pig model of genital HSV infection has proven useful in the evaluation of antiviral drugs. Recurrent herpetic infections can be induced in latently infected guinea pigs by UV irradiation for 10 min with UV-B light at 302 nm (J. Med. Virol. 28:125-128, 1989). To examine the potential for using induced herpetic recurrences in testing different approaches to antiviral therapy, latently HSV-2 infected guinea pigs >90 days post HSV-2 inoculation were prophylactically administered a proven antiviral (acyclovir), an immunomodulator (ranitidine) or a putative antiviral agent (capsaicin) prior to UV irradiation. Topical acyclovir therapy (0.2cc qid x 5d) begun 1d prior to UV and oral ranitidine (10 mg/kg/d x 5 day begun 5d before UV) reduced the severity ($p<.05$) but not the incidence of recurrent disease. Intraperitoneal acyclovir (25 mg/kg/dose bid x 5d) or ranitidine (10 mg/kg/d p.o. x 5d begun just prior to UV) reduced the incidence ($p<.01$) and severity ($p<.05$) of recurrent disease. Capsaicin is a neuropharmacologic agent with selective effects on sensory neurons. When administered SQ over two days (total dose = 125 mg/kg) followed 4d later by UV, prophylactic capsaicin therapy also significantly reduced the incidence and severity of UV induced recurrent disease ($p<.01$). These results indicate that the guinea pig model of UV radiation induced recurrent genital herpes may be used to evaluate putative new antiviral therapies including compounds that have novel mechanisms of action.