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Herpes simplex virus type 2 genital infection in male guinea pigs. D.I. Bernstein, D. Stephanopolous, M.G. Myers. J.N. Gamble Inst. of Med. Res., Cincinnati, Ohio; Children's Hospital Res. Fdn., Cincinnati, Ohio, USA.

A small animal model of genital herpes simplex virus (HSV) infection is not available to investigate the pathogenesis in males. Hartley male guinea pigs were infected with 10^5-10^6 pfu of HSV-2 MS strain by inoculation onto a small abraded area on the medial thigh. Animals developed vesicular lesions in the genital area including penile lesions: the proportion with penile lesions was inoculum size dependent, at 10^5 pfu 9 of 24 developed penile lesions vs. 11 of 12 at 10^6 pfu. Urethral shedding of HSV during the acute infection also appeared to be dependent upon inoculum size (50% vs. 92%). During the acute infection virus was detected in tissue homogenates of the peripheral nerve, lumbosacral dorsal root ganglia (DRG), spinal cord, brain, vas deferens, epididymis, testes, seminal vesicle and prostate. After recovery from the acute infection spontaneous recurrent lesions developed in all 24 animals examined. Animals developed from 1-8 recurrences (avg. $\pm$ S.D. 4.7 $\pm$ 1.9) which lasted for 1-6 days (1.8 $\pm$ 1.2 days). Intermittent asymptomatic urethral shedding was detected in 4 of 24 animals after recovery from the acute disease. Persistent virus was detected by cocultivation of DRG, vas deferens, seminal vesicle, epididymis and testes. This animal model has much in common with that seen in men and should prove useful for the study of the pathophysiology of male genital HSV-2 infections and be useful in the study of antiviral agents.

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Influence of adjuvant on glycoprotein immunotherapy of recurrent genital herpes. L.R. Stanberry, C.J. Harrison, D.I. Bernstein, R.L. Burke and M.G. Myers. Children's Hospital Research Foundation, Cincinnati, OH, and Chiron Corporation, Emeryville, CA, U.S.A.

The administration of HSV glycoproteins (gp) to animals with established HSV latency augments host immune response and reduces the frequency and severity of recurrent HSV disease (J.I.D. 157:156, 1988). Similar gp effects on immune response and on the degree of protection against primary HSV infection are adjuvant dependent (J.I.D. 155:914, 1987). We, therefore undertook a study to determine the importance of adjuvants in HSV glycoprotein immunotherapy of recurrent genital herpes. After recovery from initial genital herpes, 69 Hartley guinea pigs were randomized to receive nothing or a genetically engineered HSV-1 glycoprotein B and D (gBgD) mixture with or without adjuvant on day 21 and day 42 post HSV inoculation. The mean $\pm$ S.E. days animals experienced recurrent lesions (days 22-84) was: Control = 17.8$\pm$1.7; gBgD no adjuvant = 17.6 $\pm$ 1.7; gBgD + Adjuvant #1 = 11.8$\pm$1.7; gBgD + adjuvant #2 = 11.6 $\pm$2.0; gBgD + adjuvant #3 = 16.5$\pm$2.3. These data indicate that effective treatment of established herpesvirus infections with immunogenic viral glycoproteins is adjuvant dependent.