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AN EXPERIMENTAL TRIAL OF THE PREVENTION OF CANINE HERPESVIRUS INFECTION IN PUPPIES BY INJECTION OF IMMUNE SERUM AND ACYCLOVIR

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The efficacy of immune serum and acyclovir (ACV) was evaluated against experimentally induced canine harpesvirus (CHV) infection in newborn pups. *In vitro* trials to establish the efficacy of ACV on CHV were also carried out.

One- to 3-day-old pups from bitches with no history of CHV infection were inoculated with $10^{7.2}$ $TCID_{50}$ of CHV strain GCH-1 intranasally and subcutaneously (S.C.).

Two sera (one with a titer of 1 : 64 and the other with one of 1 : 16) from bitches that had previously lost their litters as a result of CHV infection were used as immune sera. Eight pups were injected with 2 or 3 ml/day of serum having a titer of 1 : 64 S.C. for 5 successive days after viral inoculation. Five of these 8 pups surived while 3 died. Virological and histopathological examination revealed that the death of the 3 pups resulted from causes other than CHV. Both of the pups that had received 2 ml S.C. of serum having a titer of 1 : 16 died of CHV infection with moderate lesions. CHV was isolated from the tissues of these pups.

For the *in vivo* test of ACV, eight pups were injected with CHV as described above. ACV was administrated S.C. at doses of 2.5, 5 and 10 mg/kg/day to 3 pups, respectively, and was intraperitoneally (I.P.) administrated at doses of 5 mg/kg/day for 5 successive days after viral inoculation. None of these administrations prevented the death of the pups.

The virus was isolated from the tissues of all these pups. The I.P.-injected group had more severe CHV lesions than those in the S.C.-injected group. The S.C. injected group showed differences in lesions that correlated with the dosage administered.

For the *in vitro* trial, 0.59 μg/ml ACV was required to reduce 50% of the cytopathic effect.

In conclusion, it was demonstrated that the injection of convalescent bitch serum with a high antibody titer might be a useful measure to protect puppies from CHV infection. It was also shown that ACV had antiviral activity against CHV strain GCH-1 *in vitro*. However, further studies are needed to establish a method for prevention of CHV infection in pups.