The Role of Antibody in the Treatment of Acute Herpes Simplex Virus Disease and in the Pathogenesis of Latency in Newborn Guinea Pigs

To the Editor—In their study of herpes simplex virus (HSV) antibody in the treatment of experimental neonatal HSV infection in guinea pigs, Bravo et al. [1] emphasized the potential therapeutic benefit of antibody in the treatment of acute disease. Multiple sites of infection were monitored, and infection was decreased after administration of antibody; however, there was no effect on HSV recurrences, suggesting no effect on HSV latency.

A colleague and I previously reported similar data on decreased mortality of newborn guinea pigs treated with antibody to HSV, but we noted decreased latency [2]. In that study, newborn guinea pigs were inoculated intraperitoneally (ip) with antibody to HSV or were born of females recently immunized against HSV. Mortality was similarly decreased in both groups. Latency was decreased in the ip-immunized group and was prevented in the newborns born of immunized females. Since the latter group of newborns had higher antibody titers than the former, a dose-dependent effect was suggested (although the role of other transplacental factors could not be ruled out).

The suggestion by Bravo et al. [1] that decreased latency did not result from antibody treatment, although decreased HSV replication presumably did occur, is in keeping with recent reports that HSV replication is not necessary for the establishment of latency [3–7]. Two points can be raised, however, in consideration of these observations: First, these data were obtained with replication-defective HSV mutants, not wild type HSV; second, decreased wild type HSV replication has been correlated with decreased latency. Decreased latency was measured by decreased HSV reactivation [2, 8] or decreased expression of HSV latency-associated transcripts [3, 9] (unpublished data). Decreased latency after decreased HSV replication in these studies suggests that the role of HSV replication on the establishment of latency remains unclear. Investigation of a possible dose-dependent effect of HSV antibody might clarify the role of antibody in the treatment of acute disease as well as in the pathogenesis of latency.

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References
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Reply

To the Editor—Dr. Tenser [1] raises several interesting points regarding the role of antibody in protection against the establishment of herpes simplex virus (HSV) latency as well as issues regarding the detection of latent virus and the quantification of latency. We have been interested in the role of the immune system and protection from the establishment of a latent infection with regard to both passive antibody and vaccines.

In our study, we did not detect a decrease in the number of newborn guinea pigs with recurrences when HSV antibody was given soon after intranasal inoculation [2]. In contrast, Tenser detected a decrease in the number of animals with latent virus detected by cocultivation when newborn guinea pigs received antibody 18 h before challenge of an abraded cornea [3]. Thus, two different outcomes were measured. Our experiment was not designed to evaluate latency, and we cannot determine if there was a reduction in the amount of latent virus or the number of recurrences, only that we did not get complete protection from a latent infection. Further, the two studies had several...