

Comparison of human immune responses to purified vero cell and human diploid cell rabies vaccines by using two different antibody titration methods

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Abstract

Antibody responses to a conventional rabies pre-exposure regimen of a new purified Vero cell rabies vaccine (PVRV) and a human diploid cell vaccine (HDCV) were compared in 80 healthy Kenyan veterinary students. Forty-three of the students received the PVRV and 37 received the HDCV on days 0, 7, and 28. Antibody responses were monitored by using the rapid fluorescent-focus inhibition test (RFFIT) and an inhibition enzyme immunoassay (INH EIA) on days 0, 7, 28, and 49. Both vaccines elicited a rapid antibody response. A good correlation between the RFFIT titers and the INH EIA titers was obtained ($r = 0.90$). Our results also showed that the INH EIA was more reproducible and might therefore be a suitable substitute for the more expensive and less reproducible RFFIT. The geometric mean titers determined by both tests in the two groups of students were statistically similar during the test period. The RFFIT and the INH EIA gave comparable geometric mean titers, which differed significantly only on day 28 in the PVRV group. The effect of the new PVRV is comparable to that of the more expensive HDCV, as determined by the present test systems. The PVRV could therefore be the vaccine of choice, especially in tropical rabies-endemic areas, where the high cost of the HDCV has confined its use to a privileged few.