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IMMUNOGENICITY AND EFFICACY OF NON-ADJUVANT TISSUE CULTURE-BASED RABIES VACCINE PRODUCED IN ETHIOPIA

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Rabies is 100% fatal, but it is preventable. More than 95% of human rabies cases occur in improperly treated individuals. This is partly due to the fact that modern post-exposure rabies prophylaxis is expensive and therefore not readily available in many endemic regions. Nervous tissue vaccine has been in use for more than 100yrs. These vaccines have now been superseded in purity, potency, immunogenicity and safety. The efficacy and immunogenicity of inactivated tissue culture rabies vaccine, produced in Ethiopia was evaluated. Twelve experimental dogs from local breed were duly conditioned during a quarantine period and assigned to two groups randomly. Animals in group I (cases) were vaccinated subcutaneously with 1 ml of our experimental vaccine. Dogs in group II served as non-vaccinated controls. The immune response of each dog was monitored for 90 days. On the day 90 after final sampling, all dogs were challenged in the masseter muscle with a rabies street virus of canine origin. To evaluate the titer of the rabies virus neutralizing antibodies (VNA), sera were analyzed by Fluorescent Antibody Virus Neutralization (FAVN) Test. Geometric Mean Titers (GMT) to rabies virus was determined at days 7, 15, 21, 30, 60 and 90. Geometric mean titers were equal to 1.59, 1.73, 2.19, 3.58, 3.17 and 3.35 IU/ml respectively. All dogs showed VNA titers higher than the 0.5 IU/ml mandated WHO recommended threshold. All vaccinated dogs, survived the challenge. In contrast, 83.3% of dogs in the control (non-vaccinated group), developed rabies and died. This study indicated that cell culture-based anti-rabies developed inhouse, with no adjuvant is efficacious and immunogenic.