

CONCOMITANT ADMINISTRATION OF GONACon™ AND RABIES VACCINE IN FEMALE DOGS (CANIS FAMILIARIS) IN MEXICO

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Mexico serves as a global model for advances in rabies prevention and control in dogs. The Mexican Ministry of Health (MMH) annual application of approximately 16 million doses of parenteral rabies vaccine has resulted in significant reductions in canine rabies during the past 20 years. One collateral parameter of rabies programs is dog population management. Enhanced public awareness is critical to reinforce responsible pet ownership. Surgical spaying and neutering remain important to prevent reproduction, but are impractical for massive use achieving dog population management goals on National Programs of Health. GonaCon™, an anti-gonadotropin releasing hormone (GnRH) vaccine, was initially tested in captive dogs on the Navajo Nation, 2008, where Eighteen free ranging dogs were included in a study that showed that GonaCon did not affect the ability of dogs to seroconvert in response to the rabies vaccine. This initial research step was critical to illustrate that it may be possible to reach herd immunity goals while concomitantly addressing dog population over abundance to better manage rabies. The MMH led this international collaborative study on an improved formulation of the GonaCon™, that had Gentamicine and Afotericine added to reduce local adverse effects at the application site in captive dogs with local representatives in Hidalgo, Mexico in 2011. This study included 20 bitches assigned to Group A (6 control), Group B (7 GonaCon™), and Group C (7 GonaCon™ and rabies vaccine). Vaccines were delivered IM. Animals were placed under observation and evaluated during the 61-day trial. Clinically, all dogs behaved normally. No limping or prostration was observed, in spite of minor muscle atrophy post-mortem in the left hind leg of dogs that received GonaCon™. Two dogs that began the study pregnant give birth to healthy pups. Dogs that received a GonaCon™ injection had macro and microscopic lesions consistent with prior findings, but the adverse injection effects were less frequent and lower in intensity. Both vaccines were immunogenic based on significant increases in rabies virus neutralizing antibodies and anti-GnRH antibodies in treatment Groups B and C. Simultaneous administration of GonaCon™ and rabies vaccine in Group C did not affect immunogenicity. Progesterone was suppressed significantly in comparison to controls. Future studies that monitor fertility through multiple breeding cycles represents a research need to determine the value of integrating this vaccine into dog rabies management.