

**CO.24****PERSISTENCE OF ANTI-RABIES NEUTRALIZING ANTIBODIES IN A RURAL AMAZONIAN COMMUNITY VACCINATED WITH PURIFIED VERO CELL RABIES VACCINE (PVRV) FOLLOWING VAMPIRE BAT RABIES OUTBREAK**

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Human rabies transmitted by vampire bats is a constant threat in the Amazonian region, regularly exceeding in fatalities the classical dog transmitted rabies in recent years. In 2004-5, several outbreaks have occurred in Para, Brazil. In May-June 2005, following 15 deaths, mostly children, in Augusto Correa, a rural community of 53,000 people dispersed along the Amazon estuary, 3,500 subjects aged from 2 to 60 years received purified Vero cell rabies vaccine (PVRV Verorab<sup>®</sup>, Sanofi Pasteur, France) for post- or pre-exposure prophylaxis. The presentation will summarize the follow-up of this community during 4 years after vaccination. The persistence of anti-RABV neutralizing antibodies (VNABs) levels was evaluated by RFFIT, FAVN, and Platelia ELISA (Bio-RAD<sup>®</sup>) against the PV and CVS reference strains as well as a vampire bat isolate. Subjects with VNAB levels <0.5 IU(EU)/mL were boosted. From a total of 507 subjects included in the study, 428 (84.4%) were available all along the follow-up, an excellent adherence considering the isolation, dispersion, and nomadic live of the community. Remarkably, 5% to 7% of the surveyed population were potentially re-exposed one to several times each year through animal bites (mainly dogs also bats, cats, monkeys). The persistence of the WHO minimum “seroprotective” level of VNABs (≥0.5 IU/mL) four years after vaccination was observed in 85.8% of the non boosted population (346 patients). Interestingly, no statistical difference in VNAB persistence profiles were observed in pre-exposure (45 subjects) and post-exposure (301 subjects) treated populations. Globally, the VNAB level and persistence were better in young population than in elderly, and in females than in males, particularly the 16–40 years old males which showed lower GMT and seroprotection rates. No interference was observed between anti-malaria treatment and PVRV immunogenicity. At the methodological level, RFFIT and FAVN results appeared highly concordant. The concordance was lower with the ELISA results that showed a global increase in GMT value over the years paralleled by a decrease in statistical correlation with RFFIT (Pearson’s correlation coefficient = 0.82 in 2007 to 0.42 in 2009). A hundred serum samples were selected randomly each year to evaluate the concordance of RFFIT results using the PV strain versus a local vampire bat isolate. In summary, this study demonstrated persistence of anti-rabies VNABs in the vast majority of vaccinees (PVRV Verorab<sup>®</sup>) from this community at repeated risk of vampire bat bites.

**CO.25****RABIES SURVEILLANCE IN THE UNITED STATES-EVALUATION OF RABIES VIRUS VARIANTS**

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During 2011, 49 states and Puerto Rico reported 6,031 rabid animals representing a 1.9% decrease from the 6,153 rabid animals reported in 2010.

Relative contributions by the major animal groups were as follows: 1,981 raccoons (32.8%), 1,627 skunks (27.0%), 1,380 bats (22.9%), 427 foxes (7.1%), 303 cats (5.0%), 65 cattle (1.1%), and 70 dogs (1.2%). Compared to 2010, a significant increase was reported among rabid skunks. Canine rabies virus transmission has been eliminated in the United States since 2004 and monitoring the rabies virus variant associated with rabid domestic animals is critical. We evaluated rabies diagnostic submission data for the US from 2008-2011 for reported rabid dogs, cats and coyotes. A total of 1,546 rabid cats, dogs and coyotes were reported, with rabies virus variants characterized in 35%. Cats comprised the majority of rabid animals not characterized. No canine rabies virus variants were reported. Most rabid domestic animals were infected with the rabies virus variant circulating in the predominant mesocarnivore reservoir from the geographic area of submission. However, isolated cases associated with bat rabies virus variants were reported. These findings highlight the need for enhanced surveillance to monitor the circulation of rabies virus variants in local carnivore populations to determine emergence of new rabies virus variants. State health departments may not test suspect rabid animals unless a human exposure occurs. Moreover, variant typing is not performed on all samples though CDC provides rabies virus characterization, if requested. The public health implications of host shifts and potential spillover of rabies virus variants from wildlife to domestic animals reinforces the need for additional laboratory diagnostics.

**CO.26****RABIES AND RABIES PROBLEMS IN NIGERIA**

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Official reporting of rabies in Nigeria started in 1912. The National Veterinary Research Institute (NVRI), Vom, within the last 77 years, confirmed 4809 cases of animal rabies in Nigeria. Rabies control through immunization programs has crashed woefully and consequently, the rabies situation has become chaotic and confounding. Locally, only 2,137,615 doses of dog anti-rabies vaccines were produced between 1956 and 2005 (average 43,625 per year) by NVRI, Vom. Dog population in Nigeria is currently estimated at 8 million. In the last 20 years of research and follow ups on rabies and associated problems, only 10% of the dogs’ population received anti-rabies immunization. Within the immunized dogs, rabies outbreaks occurred frequently. Evidences on the trend of rabies cases recorded (1983-1991) confirmed 40%-60% increase in rabies positive cases for every decade in Nigeria. Molecular epidemiology and phylogenetic analysis study of some dog rabies isolates in Plateau State confirmed the flow of rabies virus from neighboring and far North African countries into Nigeria. Some studies of prevalence of rabies antigens in the brain and saliva of apparently healthy dogs slaughtered for human consumption in Nigeria; revealed a 28% prevalence of rabies antigen in the consumed dogs in North-West, 31% from North-East and 24% from North-Central regions of Nigeria. Similarly, 6%-8% of the dogs had rabies antigen in their saliva at the point of slaughter. A study of the epidemiology of rabies in wildlife in Bauchi State, revealed the presence of rabies antigen in mongoose (11%), jackals (9%), squirrels (8.3%), hydrax (17%) and wild cats (16%). This suggests an ongoing