

Report on International EEHV Workshop

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On January 24-25, 2011, the 7th Annual International Elephant Endothelial Herpes Virus (EEHV) Workshop was held in Houston, sponsored by the Houston Zoo, the Elephant Managers Association, and the International Elephant Foundation. More than 80 participants from five countries, including researchers, elephant care specialists, and veterinarians gathered to exchange information and brainstorm solutions to issues surrounding EEHV disease.

There were four primary goals for the workshop: 1) Raise awareness of EEHV and inform attendees about currently available knowledge and best practices, 2) promote collaboration and coordination of efforts among researchers, 3) build relationships between and integrate the efforts of researchers, veterinarians, and animal managers, and 4) develop short-term and long-range goals in the area of research, disease management, herd monitoring, herd management, funding, and public relations.

EEHV is a rapidly fatal viral disease that affects both Asian and African elephants. There are seven different species of the elephant herpes virus and, in some cases, multiple different subtypes within a species. Taxonomically, this group of viruses is classified as “probosciviruses.” To date, more than 80 cases of EEHV disease have been documented worldwide. There have been 39 known clinical cases of EEHV in North America since 1977, resulting in the deaths of 27 Asian elephants and two African elephants. Nine elephants are known to have survived clinical EEHV disease.

In Europe, there have been twenty clinical cases of EEHV in Asian elephants and three stillbirths attributed to the disease. There have also been twenty cases of EEHV1 documented in range

countries among both free-ranging and managed Asian elephants. EEHV is an equal-opportunity disease, attacking both wild elephants and those in human care. This devastating disease represents a substantial threat to maintaining self-sustaining populations of Asian elephants both in the wild and in managed care.

Important EEHV research is being conducted on many fronts by a number of key researchers in North America, Europe, and Asia, including those at Smithsonian’s National EEHV Laboratory, Johns Hopkins University, the Baylor College of Medicine (BCM), Cornell University, Erasmus University in Rotterdam, and the Wildlife Disease Laboratory in Kerala, India. During the workshop, a number of ongoing goals were discussed, including culturing the virus, developing more sensitive serologic tests, developing real-time, quantitative PCR assays for all strains of EEHV, conducting pharmacokinetic studies of antiviral drugs, and developing a vaccine.

The workshop included excellent discussion about disease monitoring and treatment. A number of case histories from clinical cases in both North America and Europe were presented. One outgrowth of these discussions was identifying the need to develop better mechanisms for disseminating EEHV-related information. To that end, a subgroup of the workshop attendees will work to develop a website or listserv for sharing of information. There is a need to develop internal messaging about EEHV for our own professional community and also external messaging in the form of a media plan for the public and other entities. Each of these broad areas of communication is being worked on by workshop participants.

There is a desire to screen as many Asian and African elephants as possible for EEHV but currently testing labs do not have the capacity to accommodate the number of samples that would entail. All elephant holders are encouraged to review the document entitled “Elephant Endotheliotropic Herpesvirus Research and Tissue Request Protocol,” published in August, 2010, by the AZA Elephant Taxon Advisory Group.

Underlying all workshop discussions was the recognition that substantial resources will be needed to fund additional testing and research. Robust business models and new revenue streams need to be developed to ensure adequate funding to support labs and continuing research. A number of funding initiatives were identified and earmarked for further development by the working group participants. On a positive note,

the Houston Zoo announced that it had secured a sizeable grant to fund the next three years of EEHV research by BCM. Additionally, a consortium of zoos has applied for a substantial Institute of Museum and Library Services (IMLS) grant to support ongoing EEHV research by Johns Hopkins University and BCM.

It is critical that this type of workshop is convened regularly so that new information about managing this disease in our elephant collections can be shared and so that researchers, veterinarians, and elephant care staff can collectively work to identify and solve current and emerging issues. Making and sharing advances in research and disease monitoring, detection, and management will bring us ever closer to our goal of controlling EEHV and its devastating effects on both wild and managed elephant populations.



Elephant festival at Thrissur, Kerala (India) - Photos by Marshal C. Radhakrishnan