

## Short Communication

### Elephant Endotheliotropic Herpes Virus (EEHV)

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Elephant Endotheliotropic Herpes Virus (EEHV) is a disease that has been the cause of death of many otherwise healthy Asian elephants. It was first identified as the cause of death in a 16 month old Asian elephant at the National Zoo in Washington, D.C., USA. To date there have been over 30 fatal cases in North America and Europe, the majority of the fatalities have been young animals. In Europe, losses are reported as 25 % of their newborn Asian elephant populations due to EEHV, and 20 % of Asian elephants under the age of ten years are lost to EEHV in North America. This disease is a serious threat to free-ranging as well as captive elephants. Recent information indicates that EEHV is also found in captive and wild populations of Asian elephants in range countries. EEHV and the disease it causes are very complex and require a great deal more research.

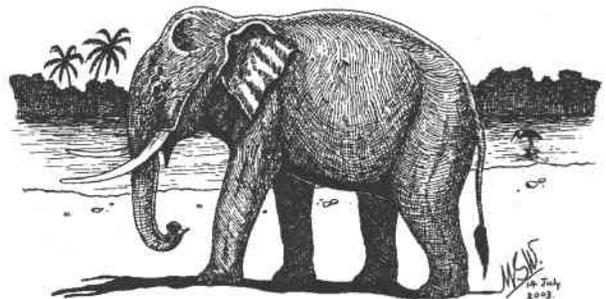
There are two types of disease presentation associated with EEHV, acute with the onset in days to hours and peracute or sudden death. Early symptoms of the disease can include bloodshot eyes, head and neck swelling, lethargy, cyanosis of the tongue and ulcers in the hard palate of the mouth. EEHV infects the micro vascular endothelial cells of the heart, liver and tongue. Viral-induced endothelial injury leads to critical hemorrhages with death attributed to cardiac failure. Transmission of EEHV is unknown and the virus is very difficult to culture. There have been four elephants with EEHV that have survived the disease all were treated immediately after diagnosis with the anti-viral drug famciclovir

In September of 2005 more than 20 animal health specialists from around the world met in Houston, Texas, USA to discuss this disease and create projects designed to expand research and improve treatment and prevention methods. The International Endotheliotropic Herpes Virus Workshop was sponsored by the Houston Zoo and the International Elephant Foundation (IEF), it brought together some of the world's foremost veterinarians, virologists, pathologists, researchers, biologists, and conservationists from Europe, Asia, Australia and North America.

Delegates to the workshop ended two days of discussions

with the creation of eleven projects designed to expand research and improve treatment and prevention methods for EEHV. The projects in progress at the close of the workshop included establishment of a herpes reference lab in Asia, research to identify and evaluate cells and secretions which harbor the elephant herpes virus, a multifaceted study that will investigate alternative antiviral medications and determine treatment protocols based on the way the virus causes the disease, a retrospective study of pathology, disease triggers, and the effect of animal movements on the progression of the disease, and identification of sources of funding to continue research. Other projects identified were isolation and cultivation of the elephant herpes vaccine, investigation of cellular immunity, and identification of specific susceptible elephants. Another project in the initial stages is development of an Enzyme-Linked Immunosorbent Assay (ELISA) test to determine which elephants have been exposed to the virus.

Workshop delegates were in agreement that the two day session was extremely productive, and the goals, priorities, and timelines established at this workshop represent a significant step toward finding a cure for this deadly disease.



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