Prevalence, Isolation and Identification of Feline Panleukopaenia Virus from Wild Felids in Nandankanan Zoo, Odisha

Authors : Arun Kharate, Sarata Kumar Sahu, Susen Kumar Panda, Niranjan Sahoo, H. K. Panda

Abstract : In the present study, an attempt has been made for isolation and identification of feline panleukopaenia virus (FPLV) from wild felids of Nandankanan zoo, Odisha, India, along with prevalence study of FPLV. Fecal samples collected from wild felids (26 tigers, 22 lions, 5 leopards, 3 hyenas, 1 jaguar, 2 foxes and 1 wild cat) were subjected to hemagglutinnation test and fluorescent antibody test. In hemagglutinnation test 13 (50%) samples from tiger, 14 (63.63%) samples from lions, 1 (20%) sample from leopards, 1 (50%) from fox, 3 (100%) samples from hyenas and 1 (100%) sample from wild cat were positive. On fluorescent antibody test (FAT), 15 (57.69%) samples from tiger, 18 (81.81%) from lions, 2 (40%) from leopards, 1 (50%) from fox, 3 (100%) from hyenas and 1 (100%) from wild cat were positive. FPLV was isolated using MDBK cell line and preliminary characterization was done on the basis of characteristic cytopathic effect. The virus samples were quantified through titration in MDBK cells. Serological confirmation of FPLV isolates was carried out by HI test, micro-SNT and indirect-ELISA. Physico-chemical characters like pH and temperature resistance along molecular identification using specific FPLV primers was carried out. Seroprevalence study of 36 serum samples employing HI test, micro SNT and indirect-ELISA revealed prevalence of 38.8, 44.4 and 72.2% respectively. During study period an adult tigress and a tiger cub died suspected of feline panleukopenia. The necropsy findings in both animals showed hemorrhagic gastroenteritis. The cytological examination revealed presence of intranuclear inclusion bodies in the intestinal epithelial cells. Spleen, mesenteric lymph node and intestine were positive for feline panleukopenia by FAT. The investigation revealed that feline panleukopenia was prevalent in wild felines of Nandankanan zoo.

Keywords : Feline panleukopenia, fluorescent antibody test, hemagglutination test, indirect-ELISA, Nandankanan zoo
Conference Title : ICVSMP 2018 : International Conference on Veterinary Science, Medicine and Pathology
Conference Location : Bangkok, Thailand
Conference Dates : January 18-19, 2018