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SEROLOGICAL SURVEY OF HUMAN PATHOGENS IN CAPTIVE CHIMPANZEES AT THE JAPANESE PRIMATE RESEARCH CENTER

T. Kooriyama[1,3], M. Okamoto[2], T. Nishida[3], H. Nishimura[2], T. Miyabe[4]

[1]Hokkaido University, Sapporo, Hokkaido, Japan, [2]Sendai Medical Center, Sendai, Miyagi, Japan, [3]Japan Monkey Centre, Inuyama, Aichi, Japan, [4]Kyoto University, Inuyama, Aichi, Japan

Presenter's Email: kooriyama@vetmed.hokudai.ac.jp

Wild chimpanzees are threatened by habitat reduction, poaching, and human diseases transmitted from tourists and researchers. Recent reports have revealed that chimpanzees often develop respiratory diseases, and viral and bacterial infections have been detected in some protected areas in Africa. Many chimpanzees are reared in primatology research institutes, where they have frequent human contact and much more opportunity to be infected with human diseases. In this study, we conducted serological multi screening for 42 human-borne respiratory infections in all 14 captive chimpanzees at a Japanese institute to detect pathogens not previously known to threaten chimpanzees. The chimpanzee sera were 100% positive for respiratory syncytial (RS) virus and human metapneumovirus, which have both been detected in wild chimpanzees in Africa. The sera were also positive at a higher rate for pertussis (86%), parainfluenzavirus III (100%), adenovirus 2,4,5,6 (79-100%), Cytomegalovirus (100%), Epstein-Barr virus (100%), Varicella Zoster virus (100%), and some minor newly detected pathogens, but not for influenza virus, mumps virus, rubella virus, or poliovirus, which have been reported in chimpanzees in American institutes. These results suggest that the prevalence of infections in captive chimpanzees might be a useful reference for infection risks to wild chimpanzees and that variations in the incidence of human-borne infections might reflect an institute's management system or regional epidemics. This study provides important information on human pathogen transmission to captive chimpanzees, including new candidate infections that might affect wild chimpanzees. We also need to accumulate data to support wild-chimpanzee conservation.

Keywords: Chimpanzee, Respiratory Disease, Captive, Serology