



Chimps die from AIDS-like disease after viral infection

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PARIS — Chimpanzees infected with the ape version of HIV can die of an AIDS-like disease, a finding that challenges conventional beliefs that chimps are immune to the virus, according to a study released on Wednesday.

Simian immunodeficiency virus (SIV), a pathogen circulating in African animal primates, is believed by many scientists to be a precursor of the human immunodeficiency virus (HIV) that causes AIDS.

It may have leapt the species barrier to humans around a century ago, snowballing into the HIV/AIDS pandemic that has so far claimed tens of millions of lives.

But, until now, SIV was thought to be unable to wreck apes' immune systems in the same way that HIV causes acquired immune deficiency syndrome (AIDS) in humans.

The only non-human primate known to be susceptible is a monkey, the Asian rhesus macaque, which is often used as a surrogate for humans in lab tests involving SIV.

But a paper published in the British journal *Nature* by primatologists working in Gombe National Park in Tanzania has found for the first time that apes are vulnerable.

They followed 94 chimps for nine years, using genetic material from faeces to identify each animal individually and its viral status.

At any one time, between 10 and 20 percent of the apes were SIV-positive.

Chimps infected with the virus were between 10 and 16 times likelier to die in any one year compared to uninfected counterparts.

In addition, infected females were significantly less likely to give birth, and any infants born to infected mothers had a low chance of survival.

Tissue samples taken from infected chimps that died prematurely also saw a plunge in the population of key immune cells -- a startling similarity to the crash in CD4 cells among humans that exposes the body to opportunistic disease.

The finding has implications for knowledge about primates' immune systems and raises further concerns for the future of the chimpanzee, an endangered species beset by habitat erosion and hunting.

"Previously, we didn't think SIV could affect chimpanzee population health. Now we know it's possible," said primatologist Elizabeth Lonsdorf of Chicago's Lincoln Park Zoo, who was a co-leader of the study.

Compared with humans, though, SIVcpz -- the strain found among chimpanzees -- is clearly less virulent for the apes than HIV is for humans.

Two theories have emerged to explain this.

One is that chimpanzees have been living with SIVcpz for millions of years and have evolved ways of coping with the pathogen. But another is that SIVcpz is a relatively recent introduction to chimpanzees. It could be a mutated virus that took genes from SIV strains from red-capped mangabeys, guenons and other monkeys, according to this idea.

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