

Gorillas are new source of HIV, scientists reveal

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(PhysOrg.com) -- Scientists have discovered that gorillas are a source of human immunodeficiency virus type 1 (HIV-1), having diagnosed a Cameroonian woman living in Paris with a strain that is different to those previously found to cause HIV-1 infections. This is the first human infection of HIV that is clearly linked to gorillas and not chimpanzees.

HIV-1 is responsible for the AIDS pandemic that currently affects 33 million people worldwide. HIV-1 originated as the result of cross-species transmissions of Simian Immunodeficiency Virus (SIV) found in chimpanzees, which is presumed to be a result of people coming into contact with infected bush meat. HIV/AIDS was first recognised by the scientific community in the 1980, while the first introduction into the human population is estimated to have been near the beginning of the twentieth century in the region of the Democratic Republic of Congo.

Now a French team, in collaboration with David Robertson and Jonathan Dickerson at The University of Manchester, have found the first definitive transfer of HIV-1 from a non-chimpanzee source, a gorilla. The unusual HIV-1 infection was found in a Cameroonian woman who had moved to Paris. It probably represents a new human lineage (tentatively named group P) that is distinct from those previously identified: group M (responsible for the pandemic), group O and group N (both mainly restricted to Cameroon).

The 62-year-old woman presented with symptoms shortly after she had moved to Paris in 2004. Due to discrepancies in her viral load testing her

French doctors investigated and found she was infected with a new strain more closely related to SIV from gorillas than HIV from humans.

The woman is the only human known to be infected with the new HIV-1 strain (RBF168) so far. However, before moving to Paris, she had lived in a semi-urban area of Cameroon and had no contact with gorillas or bush meat. In addition, lab studies of the virus have showed that it can replicate in human cells. As a result the team expect to see this strain elsewhere.

Dr Robertson, from Manchester's Faculty of Life Sciences, said: "The discovery of this novel HIV-1 lineage highlights the continuing need to monitor closely for the emergence of new HIV variants. This demonstrates that HIV evolution is an ongoing process. The virus can jump from species to species, from primate to primate, and that includes us; pathogens have been with us for millions of years and routinely switch host species."

He added: "It also highlights how human mobility can rapidly transfer a virus from one geographical location to another as has been dramatically evident with the recent emergence of swine flu."

The Manchester team contributed the computer/evolutionary analysis to the study, 'A new human immunodeficiency virus derived from gorillas', published in the latest *Nature Medicine* (2 August 2009). The French team are part of a network of laboratories that has been monitoring HIV genetic diversity.

Provided by University of Manchester

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