Molecular signature of hantavirus infection in humans decoded

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German scientists at Charité – Universitätsmedizin Berlin and Labor Berlin GmbH have succeeded in clarifying the molecular signature of the viruses that lead to an increasing size and number of hantavirus outbreaks in Germany.

These illnesses affect foremost the kidneys and lungs. Using a newly created register, the study results now enable comparison of the genetic information of a particular viral strain detected in a patient with the hantaviruses in circulation in Germany. "We can now precisely allocate a patient's viral strain where the infection occurred in a particular region at risk in Germany," explains virologist Prof. Detlev Krüger, director of the Charité Institute for Medical Virology. Study results are published in the September issue of the journal Emerging Infectious Diseases.

Hantaviruses are harbored by particular types of mice and transmitted to humans through their excretions and excrement. Infection in humans causes fever, pain—and in serious cases—kidney failure. Whereas this infection was almost unknown in Germany a few years ago, in the meantime the hantavirus belongs to one of the five most frequently occurring viral illnesses subject to registration. To date, the Robert Koch Institute has already registered 2,261 cases of the virus this year so that 2012 already marks a "hantavirus record year." This demands new research efforts into the illness, its spread and risk of infection. Through the study results, particular regions where the virus breaks out and the risk of human infection within Germany can be increasingly better defined and understood.

The Berlin researchers' work was made possible by a tight network of physicians and zoologists throughout Germany, as well as by scientists from the Friedrich Loeffler Institute in Greifswald.

More information: Ettinger J, Hofmann J, Enders M, Tewald F, Oehme RM, Rosenfeld UM, Ali HS, Schlegel M, Essbauer S, Osterberg A, Jacob J, Reil D, Klempa B, Ulrich RG, Kruger DH. Multiple synchronous outbreaks of puumala virus, Germany, 2010. *Emerg Infect Dis.* 2012 Sep;18(9):1461-4. doi: 10.3201/eid1809.111447