

# Genetics might explain why some people get bird flu

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By Tan Ee Lyn

SINGAPORE (Reuters) - People who have been infected with the H5N1 bird flu virus might be genetically predisposed to infection by avian viruses, leading disease experts suggested on Thursday.

Of the 205 reported cases of human infections since late 2003, there have been many family clusters involving blood relatives, such as father and children, mothers and daughters. Of the total infections, 113 people died in nine countries.

"There have been family clusters. So there has to be certainly a genetic aspect to it," Robert Webster of the St. Jude Children's Research Hospital in Memphis, Tennessee, told participants of a bird flu conference organized by the Lancet medical journal in Singapore.

Another leading expert Hiroshi Kida, who has spent more than three decades working on viruses, has long harbored the same theory.

"There has not been a single case of infection involving husband and wife," Kida said told Reuters in an interview. Kida is with the department of diseases control at Hokkaido University in Japan.

Kida explained that people infected with H5N1 have a carbohydrate receptor on cells lining their throats. The receptor -- called alpha 2,3 -- is predominantly found in birds and avian influenza viruses like to bind to this class of receptors to replicate and cause disease.

Human influenza viruses, however, prefer to bind to another receptor called alpha 2,6, which is dominant in humans.

"I think people who are infected with avian strains are special. They must have alpha 2,3 receptors," Kida said.

Although humans have some amount of alpha 2,3, Kida said alpha 2,6 was by far more "dominant" in most people.

## DANGEROUS

Kida is now trying to find H5N1 survivors in Vietnam and Thailand to verify his theory, and if it proves to be true, it could mean that most people simply cannot catch H5N1 easily -- unless the virus mutates.

"If it changes receptor specificity, then it must be dangerous," Kida said.

Many experts see H5N1 as possibly triggering an influenza pandemic that is long overdue. But that could only happen if it mutates sufficiently to become easily passed among people -- something that has not happened.

Most of its victims contracted the virus directly from sick birds. And there have not been any proven cases of human-to-human transmission.

Although very little is known about the virus, much work has been done to find out how it is transmitted and even why so few people have been infected and why it hasn't yet become infectious among people.

A group of researchers recently postulated that the virus lodges itself deep in the lungs, and not in the upper respiratory tract where it could more easily be dislodged and get out of the body and spread.

While Kida does not dismiss this theory, he thinks it is not the only one.

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