New drug may fight serious respiratory virus in infants

August 21 2014, by Steven Reinberg, Healthday Reporter

RSV leading cause of hospitalization among infants, researchers note.

(HealthDay)—An experimental drug shows promise in treating respiratory syncytial virus (RSV), a leading cause of pneumonia in infants, researchers report.

"We are finally making major progress in being able to treat human RSV infections—the world's second leading cause of serious viral pneumonia, second only to influenza virus," said study author Dr. John DeVincenzo, a professor of pediatrics at the University of Tennessee College of Medicine in Memphis.

"There is no current treatment or vaccine for RSV pneumonia, and so patients were previously forced to get over the virus by themselves," he said. RSV is the leading cause of hospitalization among infants in the United States, the researchers noted.

In this small study of 140 adults, the drug, dubbed GS-5806, reduced the amount of the virus in the systems of those who received the medication.

"For the first time, we showed that once we reduce the amount of virus in patients, they very quickly started to feel better," DeVincenzo said.

Moreover, the drug appeared safe and easy to give, he said.

DeVincenzo noted that infants, the elderly and people with lung conditions and immune system problems are those most at risk for RSV. "The virus can cause severe disease, hospitalization and death in these populations," he said.

The finding paves the way for this new antiviral medicine to be tried in those groups of people, DeVincenzo added.

The report was published Aug. 21 in the *New England Journal of Medicine*.

Dr. Otto Ramos, an infectious disease specialist at Miami Children's Hospital, said, "I think this is promising. Obviously, this is just the first step of one in many."

How well it will work in children and how well it is tolerated is still an unanswered question, he noted. "Whether it is going to have the same effect is yet to be determined," Ramos said.

For the study, DeVincenzo and colleagues tried GS-5806 on healthy adults who had been infected with RSV. The drug was given in varying doses to 87 of 140 participants, while the others received an inactive placebo.

DeVincenzo said that the drug was first tried on adults because of ethical

issues surrounding the purposeful infection of volunteers in the trial.

"Babies and certain other populations, including the mentally disabled, cannot weigh risks and benefits fully and therefore cannot be asked to participate in a trial of a medicine that is experimental, and that there is not clear evidence of benefit to themselves personally," he said. "Competent adults can choose to accept risk to themselves based on purely an altruistic potential future benefit to mankind."

Almost all medicines developed for children are first developed for adult diseases and then given to children once the drug's safety and efficacy are established, DeVincenzo explained.

"However, there are some diseases of infants and children which do not have a clear parallel disease in adults," he said. "RSV is one of these pediatric-specific diseases. For this and other reasons, we first showed that we could safely infect adults with the virus that caused a similar, though much milder, disease in these adults. Then we treated these experimentally infected adults with our newly discovered antiviral drug."

Side effects of the treatment were mild, DeVincenzo noted. "There were a small number of laboratory tests that became abnormal during the therapy. These laboratory abnormalities are commonly seen in many types of medications, and were a small drop in the white blood [cell] count and mild elevations in liver enzymes, which are routinely measured for safety assessments," he said.

Based on this trial, DeVincenzo said trials of the drug in infants and in the elderly are being planned.

The study was funded by Gilead Sciences, maker of GS-5806.

More information: Visit the U.S. Centers for Disease Control and

Prevention for more on RSV.