

Study reveals clues to childhood respiratory virus

February 13 2013

New Vanderbilt-led research published in the Feb. 14 issue of the *New England Journal of Medicine* has identified the relatively unknown human metapneumovirus (MPV) as the second most common cause of severe bronchiolitis in young children.

Senior author John Williams , M.D., associate professor of Pediatric Infectious Diseases and a well-known expert in MPV research, said it is gratifying to offer a clearer picture of how this virus impacts children.

"We found MPV is as important a cause of respiratory illness as influenza, and caused more illness than the three common types of parainfluenza virus combined. In fact, in young children, the burden of MPV was second only to RSV ([respiratory syncytial virus](#)) as a cause of bronchiolitis," Williams said.

The prospective research spanned six years, from 2003 to 2009, and involved samples taken from more than 10,000 children under age 5. The children were hospitalized, treated in an emergency department, or seen in an outpatient clinic with a lower respiratory infection (bronchiolitis).

Lead author Kathryn Edwards, M.D., the Sarah H. Sell and Cornelius Vanderbilt Chair in Pediatrics and director of the Vanderbilt Vaccine Research Program, led the clinical portion of the study while Williams' laboratory tested the samples for their viral content.

Three New Vaccine Surveillance Network (NVSN) sites participated: Rochester, N.Y., Cincinnati and Nashville, making this the largest prospective trial to date to investigate the burden of MPV.

Researchers found MPV tends to affect more children over age 1 than RSV, and while both viral infections strike in late winter or spring, MPV has a seasonal peak that lags behind the typical peak for RSV by about a month. The authors said physicians commonly see patients with this [virus](#), but know little about it.

"It is important to understand the burden of disease caused by human metapneumovirus so that we can work on vaccines to prevent them. We want to understand the enemy so that we can counteract it," said Edwards.

MPV was first described in 2001 and there are no specific treatments or vaccines for it other than supportive care for bronchiolitis, such as oxygen, bronchodilators and intravenous fluids. No children involved in this study died from their infections. Williams said this is generally true for all the major causes of [bronchiolitis](#) in the United States because of the level of medical care available in this country.

"But in developing nations worldwide, lower respiratory illness is a leading cause of death in young children. Only diarrhea kills more children under the age of 5. We can infer, because of this study, that MPV is a major contributor to these deaths worldwide. We hope this will help stimulate more interest in research on vaccines and treatment for MPV," Williams said.

Provided by Vanderbilt University Medical Center

Citation: Study reveals clues to childhood respiratory virus (2013, February 13) retrieved 27

April 2024 from

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