# Klebsiella pneumoniae: Increased Transmission in South Carolina

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Researchers of the South Carolina Department of Health and Environmental Control (SCDHEC) analyzed the epidemiology of Klebsiella pneumoniae (KP) from the region. They reviewed every fatal human infection of the organism with the exception of one case in the U.S. and Spanish-speaking community for an indeterminate period, including the historical sequences with an a complete view of the epidemiology from the late 1970s to the present. They have hypothesized that the epidemiology consists of a transmission chain (a likely common contact- transmission chain) within the community by low level agents and hospital chains as the only circulating agents.

The study found epidemiologic evidence for a possible cause of SINP whooped paralysis in 56 out of 70 known cases of presumed KPH pneumonia. It investigated the progression of SINP into a sub-epidemic pathogen in the pathogenâ€™s clinical history, including studies on mortality and intensive care unit (ICU) case-susceptibility profiles. By analyzing at least 30,000 records of vaccine engrafted patients, their pathogenic histories, and currently available case-comparison serotype (SIP) series data, the scientists found a significant increase in the incidence of pneumococcal bloodstream infections with G02a serotype (27 percent) from 1998-1999 to 2001-2002 and epidemiologic evidence for G02a serotype clinical sequelae. One cohort of patients had a 25 percent decrease in SINP per cycle in hospital since the first visit for invasive disease compared to similar cohorts in the pre-vaccine era. From 1998-1999, hospital distributions of serotype combinations increased from five in 1999 to thirteen in 2000-2001, followed by 43 serotype combinations in 2001-2002. Studies found three common groups of patient transmission (pathogen-to-epidemic circulation), including 4 one-time sources, 1 2-time source, and a new, non-hyperspecific, association with establishment of PICU that could not be explained by historical trends.

This study confirms that KPH pneumoniae continues to cause major infections in the Southeast. Follow-up studies of the clinic and institutionalized population continued to identify significant increases in KPH transmission since the changes in epizootic status. Clinical studies continue to demonstrate the link between SINP-related viruses with pneumococcal diseases in patients with changes in SINP in the bloodstream. The fact that infectious coronaviruses in the IVS27/KPH sub-group exhibits a high virus-to-immunoglobulin ratio (IVSGAR) may inform further studies of this protocol in order to reduce hospital-wide transmission rates.

This study is published in the December 22, 2011, print issue of M.E.H.L.: an international journal of microbiology.

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