

Obstructive Bronchitis and Pneumonia by a Mixed Infection of HPIV- 3, S. pneumoniae in an Immunocompromised 10M Infant: Case Report

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Abstract : Introduction: Pneumonia is an infection of the pulmonary parenchyma. HPIV 3 is one of four viruses that is a member of the Paramyxoviridae family designated types 1-4 that have a nonsegmented, single-stranded RNA genome with a lipid-containing envelope. They are spread from the respiratory tract by aerosolized secretions or by direct contact with secretions. Type 3 is endemic and can cause serious illness in immunocompromised patients. Illness caused by parainfluenza occurs shortly after inoculation with the virus. The level of immunoglobulin A antibody in serum is the best predictor of susceptibility to infection. Streptococcus pneumonia or pneumococcus is a Gram-positive, spherical bacteria, usually found in pairs and it is a member of the genus Streptococcus. Streptococcus pneumonia resides asymptomatically in healthy carriers typically colonizing the respiratory tract, sinuses, and nasal cavity. In individuals with weaker immune systems like young infants, pneumococcal bacterium is the most common cause of community-acquired pneumonia in the world. Case Report: The aim is to present a case of lower respiratory tract infection in an infant caused by parainfluenza virus 3, S. pneumonia and undifferentiated gram-negative bacteria that was successfully treated. The infant is with a history of recurrent episodes of wheezing in the past 3 months. Infant of 10 months presents 2 weeks before admittance with high fever, runny nose, and cough. The primary pediatrician prescribed oral cefpodoxime for 10 days and inhaled salbutamol. Two days before admittance in hospital the infant with high fever, cough, and difficulty breathing. At admittance, infant is pale, anxious with rapid respirations, cough, wheezing and tachycardia. On auscultation: vesicular breathing sounds with high pitched wheezing and on the right coarse crackles. Investigations: Blood analysis: RBC: 4, 7 x10¹²/L, WBC: 8,3x10⁹/L: Neut: 42.73% Lym: 41.57%, Hgb: 9.38 g/dl MCV: 62.7fL, MCH: 20.0pg MCHC: 31.8 g/dl RDW: 18.7% Plt-307.9 x10⁹/L CRP: 2,5mg/L, serum iron-7.92umol/L, O₂sat-97% on blood gas analysis, puls-125/min. X-ray of chest with hyperinflation and right pericardial consolidation. Microbiological analysis of sputum sample is positive for undifferentiated gram-negative bacteria (colonizer)-resistant to cefotaxime, ampicillin, cefoxitin, sulfamet.+trimetoprim and sensitive to amikacin, gentamicin, and ciprofloxacin. Molecular multiplex RT-PCR for 19 viruses and multiplex PCR for 7 bacteria test for respiratory pathogens positive for Parainfluenza virus 3 (Ct=22.73), Streptococcus pneumonia (Ct=26.75). IED: IgG-9.31g/L, IgA-0.351g/L, IgM-0.86g/L. Therapy: Treatment was started with inhaled salbutamol, intravenous antibiotic cefotaxime as well as systemic corticosteroids. On day 7 because of slow clinical resolution of chest auscultation findings and an etiologic clue with a positive sputum sample for resistant undifferentiated gram negative bacteria, a second intravenous antibiotic was administered amikacin. The infant is discharged on day 14 with resolution of clinical findings. Conclusion: Mixed co-infections with respiratory viruses and bacteria in immunocompromised infants are likely to lead to a more severe form of community acquired pneumonia that will need hospitalization.

Keywords : HPIV- 3, infant, pneumonia, S. pneumonia, x-ray chest

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