Severe Pneumonia Caused by Human Bocavirus in an Immunocompetent Child – a Case Report

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INTRODUCTION: Human bocavirus (hBoV) was discovered in 2005 in children with respiratory infection and four genotypes have been described so far. HBoV1 is mostly detected in respiratory samples while hBoV2-4 in stool of patients with gastroenteritis. Specific antibodies against hBoV are present in 64 to 95% of adults which indicates frequent encounters with hBoV. HBoV causes pneumonia, bronchiolitis, bronchitis and upper respiratory tract infections.

CASE REPORT: An immunocompetent 17-month-old girl was admitted to our hospital during the second day of a febrile illness with symptoms of cough, breathing difficulties and lack of appetite. On admission she was subfebrile, tachycardic and tachypneic. Chest X-ray showed minor peribronchial infiltrates, several plate-like atelectasis and hyperinflation of the pulmonary parenchyma. Laboratory results showed leukocytosis (22.1 x 109/L) with neutrophilia (79%) and the highest level of C-reactive protein was 7.1 mg/L. Mechanical ventilation was performed during 7 days due to respiratory failure. She was treated with ceftriaxone, azithromycin, oseltamivir, ribavirin and extensive symptomatic therapy – nebulization with salbutamol, ipratropium bromide, venous methylprednisolone, etc. Multiplex PCR testing for 15 different respiratory viruses detected hBoV DNA in tracheal aspirate. HBoV viral load was 1.86 x 106 copies/ml in tracheal aspirate and 1.47 x 102 copies/ml in blood. Extensive testing for wide variety of respiratory pathogens detected no other causative agent. Considering the duration of fever and refractory bronchospasm IgM-enriched intravenous immunoglobulins (Pentaglobin®) were applied during two consecutive days (6.5 ml/kg/day). Respiratory function improved and the girl was extubated with full recovery.

CONCLUSION: HBoV respiratory infection is usually mild and self-limiting but can also lead to the acute respiratory insufficiency in a previously healthy, immunocompetent child. Specific treatment is not available, but IgM-enriched immunoglobulins could have a favourable effect.