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Influenza virus infection predisposes children to secondary bacterial sinusitis

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The aim of this study is to demonstrate that bacteria responsible for sinusitis could productively colonize during influenza virus L infection. Sinusitis is characterized by inflammation of the lining of the paranasal sinuses. Bacterial sinusitis can sometimes develop following a viral upper respiratory infection caused by Influenza virus. Common bacterias that causes sinus infection includes streptococcus pneumoniae, Haemophilus influenza and Moraxella catarrhalis. They are the leading cause of sinusitis in children. Typical signs and symptoms include fever, unilateral facial pain or pressure, hyposmia/anosmia, nasal congestion, bilateral nasal mucosal edema, purulent nasal secretions and sinus tenderness. Pain on palpation over the frontal sinuses can indicate inflammation. Maxillary sinus infection can cause toothache with tenderness over the molar region. Ethmoid sinusitis may be associated with swelling, tenderness and pain around the eyes. This retrospective cross-sectional study was conducted from May 2014 to May 2016. Pediatric patients of age 4 to 10 years were recruited in this study. A history and examination form designed and was filled by concerned doctors. Nasal cytology (nasal wash/nasal swab) was done as a diagnostic test. For data analysis SPSS 16.0 software was used. Children of age 4 to 10 years, regardless of gender, presenting to pediatric clinic of tertiary care hospitals of Karachi with principal complain of fever, cough, nasal discharge and nasal congestion after influenza virus infection were included. Patients with nasal polyp, deviated nasal septum, allergic reactions, trauma to face, respiratory tract infections and autoimmune disorders were excluded from the study. Total 786 patients were inspected having influenza virus infection, out of which 38% were male and 62% were females. Nasal cytology was done and Streptococcus pneumoniae is found in 47.24% of children. H. influenzae causes about 28.67% of sinusitis cases in children. Moraxella catarrhalis causes 24.09% of sinusitis cases. Sinusitis is one of the most common problems encountered in the tertiary care setting. Secondary bacterial infection may supervene with symptoms persisting for >10 days. Children infected with influenza virus have higher titers of bacteria in the nasal wash. Although the mechanisms underlying the synergistic interaction between influenza viruses and bacterial colonization are poorly understood, it is clearly a multifactorial process. It is likely that multiple viral virulence factors contribute by affecting the host in ways that benefit the bacteria.

Biography

Sonia Shahid is currently a MBBS student of Karachi Medical and Dental College, Karachi, Pakistan. She has been a part of several national and international researches and many are ongoing. She has attended several national and international seminars and conferences. She is an inquisitive student with a passion for education as a power for change and improvement in the healthcare field of her country and is very ambitious in pursuing her career.

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