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Viral infections of the respiratory tract in HIV-infected children

Robin J Green Department of Paediatrics and Child Health, University of Pretoria, RSA A lthough bacterial pneumonia is an important disease entity in HIV-infected children, of equal importance is the contribution viruses make to lung disease in these children. Acute bronchiolitis is defined as viral-induced inflammation of bronchioles. Bronchiolitis is a disease of infancy and presents as the first episode of wheeze in HIV-infected and HIV-uninfected children alike. The mean age of bronchiolitis in HIV-infected children is 8 months as opposed to the HIV-uninfected children where the mean age is 5.8 months. HIV-infected bronchiolitics isolate the same viral organisms as the HIV-uninfected children, mainly RSV. RSV occurs from February to August annually, in Gauteng; although actual numbers and disease severity vary from year to year. Bacterial co-infection is a rare event and predicting bacterial infection is not aided by the measurement of C-reactive protein.

Many infants who have bronchiolitis go on to wheeze repeatedly with each new viral lower respiratory tract infection. They don't have asthma. However our research work has demonstrated that in Africa the differential diagnosis of recurrent wheeze in infancy is much longer than in the Northern Hemisphere. We must add HIV infection and TB to this list.

Admission to hospital is a frequent event for children with pneumonia. We have been auditing the costs of admission of children with pneumonia and document that the case fatality rate for HIV-associated acute pneumonia is 14% in a general ward and 46% in a PICU. The actual bed costs are 198 dollars for an HIV-infected child in a ward but 437 dollars in a PICU. That is three times higher than an HIV-uninfected child. With regard to severe pneumonia in HIV-infected children we have been experimenting with strategies to reduce mortality in *Pneumocystis pneumonia* (PCP). Whilst the primary cause is Pneumocystis jerovici, co-infection with viruses especially Cytomegalovirus appears to be responsible for significant mortality. Through the use of lung protective ventilation and addition of oral steroids and ganciclovir we have reduced mortality from 90% to 22%. PCP should be regarded as a new pulmonary syndrome with multiple overlapping aetiologies, especially viral.

Biography

Dr. Robin J Green is Professor of Paediatrics and Child Health at the University of Pretoria, South Africa. He is also Director of Paediatric Respiratory and Critical Care Services at Steve Biko Academic Hospital in Pretoria. He received his Ph.D. degree in Paediatrics from the University of the Witwatersrand. He is a National Research Foundation of South Africa rated scientist and lectures and teaches widely. His current research interests include viral bronchiolitis in the developing world and asthma control measurements.