

737. The Prevalence of Diagnosed Chronic Lung Disease in US Infants by Gestational Age: Implications for RSV Policy

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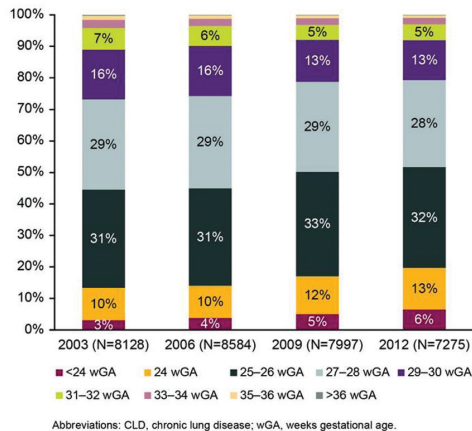
Background. Perinatal chronic lung disease (CLD), previously referred to as bronchopulmonary dysplasia (BPD), is associated with preterm birth and occurs rarely among term infants. Children with CLD are at elevated risk for severe RSV disease in the first 2 years of life. Definitions of CLD/BPD identify infants who require supplemental oxygen at 28 days of life or 36 weeks postmenstrual age, with no restriction by gestational age (GA) at birth. However, the AAP Committee on Infectious Disease guidance does not recommend RSV immunoprophylaxis for infants with CLD born at ≥ 32 weeks gestational age (wGA), even though infants with CLD/BPD up to 41 wGA were included in pivotal efficacy studies. This study determined the prevalence of diagnosed CLD in US infants as a function of wGA at birth and the number of infants with CLD born at ≥ 32 wGA.

Methods. The Kids' Inpatient Database (KID) is a nationally representative survey conducted every 3 years in the United States. Birth hospitalization data from KID were utilized to estimate the prevalence of CLD (ICD-9 = 770.7) among US infants in 2003–2012 overall and as a function of coincident codes for GA (ICD-9 = 765.21–765.29, reported in 2-week intervals). The prevalence of CLD among 32 wGA infants was imputed based on the distribution of CLD cases as a function of wGA. KID data from 2015 were not available due to the transition to ICD-10 coding.

Results. A total of 31,984 infants had a CLD diagnosis across the 4 years, representing 0.2% of US births. The prevalence of CLD declined from 20.8 to 19.5 per 10,000 between 2003 and 2012. Of those, 25,554 infants with CLD (80%) had GA coded in the database. The percentage of CLD infants born at < 27 wGA increased from 44% in 2003 to 52% in 2012, whereas the percentage at ≥ 29 wGA decreased from 27% to 21% (figure). Overall, the percentages born at 31–32, 33–34, and > 34 wGA were 5.7%, 2.2%, and 1.2%, respectively. An estimated 5.7% of infants with CLD were born at ≥ 32 wGA, representing 0.9 of every 10,000 US births or ~350 infants annually.

Conclusion. Fewer than 400 infants are born at ≥ 32 wGA and diagnosed with CLD annually in the United States. The rationale for excluding this small but high-risk group of infants from the population recommended for RSV immunoprophylaxis is not clear. Funded by AstraZeneca

Figure. Distribution of US Infants Diagnosed with CLD by Gestational Age by Year



Disclosures. C. S. Ambrose, AstraZeneca: Employee, Salary and Stocks. X. Jiang, EpiStat Institute: Employee, Consulting fee and Salary. AstraZeneca: Consultant, Consulting fee. K. Mavunda, AstraZeneca: Speaker's Bureau, Speaker honorarium.

738. Role of Respiratory Syncytial Virus and Mycoplasma pneumoniae in Pediatric Community-Acquired Lower Respiratory Tract Infections

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Background. Respiratory syncytial virus (RSV) infection is a major cause of serious lower respiratory disease in infancy and early childhood and *Mycoplasma pneumoniae* (*M. pneumoniae*) is a common cause of respiratory tract infections in all age groups. This study was conducted to determine the role of RSV and *M. pneumoniae* and in pediatric lower respiratory tract infections employing serological tests, polymerase chain reaction (PCR) and reverse transcriptase PCR analysis.

Methods. In this prospective study, 75 children aged 1 month to 5 years with acute lower respiratory tract infections (LRTIs) were investigated. Paired serum

samples were obtained on admission and after 4–6 weeks to assay for *M. pneumoniae* antibodies. Nasopharyngeal aspirates were obtained for the detection of RSV antigen by using the immunochromatographic test, reverse transcriptase-polymerase chain reaction (RT-PCR) for RSV and *M. pneumoniae* by PCR.

Results. RSV infection was positive in 20(60.60%) children aged < 1 year and 13 (39.40%) aged 2–5 years, the difference being statistically insignificant ($P = 0.360$). *M. pneumoniae* infection was documented in a 15(57.6%) children aged < 1 year age and 11(42.4%) in age 2–5 years which was statistically significant ($P = 0.026$). Clinical and radiological features among RSV and *M. pneumoniae* positive and negative cases were comparable. Thirty (40%) children were positive for RSV antigen and by RT-PCR and 3(12%) only by RT-PCR. Serological evidence of *M. pneumoniae* infection was documented in 24(32%) children. *M. pneumoniae* PCR was positive in 8 (10.66%) patients. Together, serology and PCR detected *M. pneumoniae* in 26(34.66%) children. Considering RT-PCR as a diagnostic standard, the sensitivity of RSV antigen by immunochromatography was 90.90%, specificity 100%, positive predictive value 100% and a negative predictive value of 93.3%. The sensitivity of *M. pneumoniae* serology was 75%, specificity 73.3%, positive predictive value 25% and a negative predictive value of 96% considering PCR as a diagnostic standard.

Conclusion. Our data underline the role of RSV and *M. pneumoniae* as the major cause of community-acquired lower respiratory tract infections in children aged < 5 years.

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739. Middle East Respiratory Syndrome Coronavirus Infection Profile in Qatar: A 7-Year Retrospective Study

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Background. A deadly zoonotic Middle East respiratory syndrome coronavirus (MERS-CoV) had emerged over the last 7 years in the Arabian Peninsula. As of February 28, 2018, 2,182 cases of MERS-CoV infection (with 779 deaths) in 27 countries were reported to WHO worldwide. The objectives of this study were to identify the clinical and epidemiological characteristics of MERS-CoV infection as well as determine its clinical outcome.

Methods. This was a retrospective-observational study of all laboratory confirmed cases of MERS-CoV infection conducted at the main seven hospitals in the State of Qatar from January, 2012 to April 2018. We used the Fast Track diagnostics real-time reverse-transcription polymerase chain reaction (rRT-PCR), targeting the uPE and ORF1a genes respectively. Demographics, clinical information, potential contacts and probable risk factors were collected and analyzed by standard statistical methods.

Results. The mean annual incidence was 1.7 per 100,000 person-years. Among the 24 confirmed cases of MERS-CoV, males constituted the vast majority of cases (23 males) with a median age of 52 years (range 22–74). Fifty percent of the cases were Qatari and 42% reside in the same region. 67% of the cases had contact with camels, and 21% had contact with MERS-CoV-infected patient. Thirty-eight had travel history within 2 weeks of symptoms onset to the Kingdom of Saudi Arabia. Fifty percent were smokers and 42% had comorbidities.

The median symptoms duration was 4.5 days. Most of the patient presented with flu-like symptoms, were fever was the most common presentation, followed by cough, SOB, diarrhea, abdominal pain and headache, 96%, 83%, 33%, 8%, 8% and 4%, respectively. All patients were admitted to a tertiary hospital with a median hospital stay 41 days (8–97). Forty-five percent patients developed severe sepsis with multi-organ failure and needed ICU admission. Fifty percent patients developed acute kidney injury, 29% patients were on hemodialysis and 16% needed extra-corporeal membrane oxygenation. Thirty-three percent patients died. The rest of patients had recovered from the infection and discharged home. Among those who died all had one or more comorbidities.

Conclusion. MERS-CoV infection is a rare infection in the State of Qatar, seen in both Qataris and expatriates with and without travel history. The infection in patients with comorbidities carries high mortality.

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740. Impact of the 2014 American Academy of Pediatrics Guidance on Respiratory Syncytial Virus Hospitalization Rates for Preterm Infants <29 Weeks Gestational Age at Birth: 2012–2016

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