Letters to the Editor

The authors have disclosed that they do not have any potential conflicts of interest.

Heitor Pons Leite, MD, PhD, Discipline of Nutrition and Metabolism, Department of Pediatrics, Federal University of São Paulo, São Paulo, Brazil; Paulo Cesar Koch Nogueira, MD, PhD, Pediatric Nephrology Section, Department of Pediatrics, Federal University of São Paulo, São Paulo, Brazil

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Multiplex Tests in Critically Ill Children With Severe Lower Respiratory Tract Infections

To the Editor:

Viral agents are the leading cause of lower respiratory tract infection (LRTI) in infants and children (1).

Until a few years ago, the diagnosis of a viral pneumonia in children was exclusively based on the clinical presentation, epidemiologic setting, and exclusion of bacterial pathogens by normal WBC count, low serum C-reactive protein (CRP), and procalcitonin or by negative cultures.

Nowadays, many respiratory viral infections can be diagnosed through the use of rapid diagnostic techniques that focus on the detection of the virus or its components in the respiratory sample. The most commonly identified viruses are rhinovirus, human bocavirus, human metapneumovirus, and respiratory syncytial virus (2).

Among physicians, there is a bit of confusion about the pre-analytical procedure to obtain a suitable sample and the available diagnostic tests.

In a recent issue of Pediatric Critical Care Medicine, Randolph et al (3) have evaluated how the sampling site and the type of diagnostic test influence test results in children with suspected severe LRTI.

From their work, we learned that nasopharyngeal flocked swabs are better than nasopharyngeal aspirates because they are less painful and uncomfortable for the infants, but they have the same diagnostic accuracy.

The second key message is that reverse transcription-polymerase chain reaction (RT-PCR)–based testing for influenza has the highest diagnostic accuracy, whereas rapid antigen influenza diagnostic testing has low sensitivity and should not be routinely used for guiding use of influenza antiviral therapy.

The authors deserve our sincere appreciation for clarifying these two issues.

We would like to underline the importance of early and correct diagnosis of influenza infection because these viruses are potentially life threatening and have a therapy that is effective only if started in the early phase of infection (4).

Based on what said above, RT-PCR–based testing for influenza should be used in all tertiary pediatric referral centers.

Another discussion topic is the actual clinical role of viral multiplex PCR-based tests in severe LRTI.

These kits allow the rapid and accurate identification of most common human respiratory virus, but at the moment, they do not guide therapy because viruses they detect, except for influenza virus, have no therapy.

These multiplex tests may reduce empirical antimicrobial treatment enhancing antibiotic stewardship and may help to describe better the etiology and epidemiology of severe LRTI.

These theoretical benefits suffer from the high costs of these kits, which is the main impediment to their widespread dissemination.

In our opinion, in acute setting, clinical presentation, epidemiologic data, blood WBC, CRP and procalcitonin, and imaging can help to differentiate between bacterial and viral LRTI. In uncertain scenarios, such as interstitial pneumonia, multiplex kits, including PCR to identify atypical respiratory bacteria, help physicians, and improve therapy (5).

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Jacopo Colombo, MD, Department of Pathophysiology and Transplantation, University of Milan, Milano, Italy, Department of Anesthesia and Intensive Care, Paediatric Intensive Care Unit, Papa Giovanni XXIII Hospital, Bergamo, Italy; Ezio Bonanomi, MD, Department of Anesthesia and Intensive Care, Paediatric Intensive Care Unit, Papa Giovanni XXIII Hospital, Bergamo, Italy

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Ventilator-Associated Infections Need a New Approach

To the Editor:

In a recent issue of Pediatric Critical Care Medicine, Joy and Brilli (1), echoed a main point in our article (2), published in a recent issue of Pediatric Critical Care Medicine, that “the only consensus in the literature regarding ventilator-associated infections (VAI) in children is that current definitions are far from ideal.” They call for “prospective studies to investigate how to adapt (the Centers for Disease Control and Prevention (CDC)’s revised ventilator-associated event) criteria for the PICU population.”

Another article published in January in Critical Care Medicine gives a glimpse into the pediatric version of ventilator-associated conditions (VAC) (3). Like for adults, criteria for pediatric VAC will be based on worsening oxygenation but will define worsening oxygenation with FiO₂ and mean airway pressure (MAP). Cocoros et al (3) recommend the thresholds for increases in FiO₂ and MAP to be 0.25 and 4 cm H₂O, respectively. Our data support that if VAC starts with a prerequisite of worsening oxygenation, it does not come close in telling the whole story of VAI. Monitoring VAC may lead to improvements in mechanical ventilation, but perhaps, VAC cannot do. The appropriateness of the most common indication for antibiotics in the PICU needs to be studied, and the current direction of the CDC’s ventilator-associated events does nothing to address this problem.

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Andrew L. Beardsley, MD, MS, Section of Pediatric Critical Care Medicine, Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN

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Blood Volume, Plasma Volume, and RBC Volume in Polycythaemic Neonates After Palliative Congenital Heart Surgery

To the Editor:

In a recent issue of Pediatric Critical Care Medicine, Siehr et al (1) speculate that haemoconcentration in cyanotic neonates following the Norwood operation is a result of capillary leak syndrome (CLS) and concluded that haemoconcentration could be used as an early marker of CLS.

Starting from this work, we would like to make some pathophysiologic considerations.