2630. Treatment of RSV Lower Respiratory Tract Infection in Two
Immunocompromised Children with Pooled Immunoglobulin Containing
Standardized Levels of Neutralizing Anti-RSV Antibody
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Background: Respiratory syncytial virus (RSV) can cause severe lower respira-
tory tract infection (LRTI) in immunocompromised children. There is no standard
effective treatment, though ribavirin (inhaled or oral), pooled human intravenous
immunoglobulin (IVIG), and monoclonal anti-RSV antibody (palivizumab) have been
described. RI-002 (ADMA Biologics Inc.) is a pooled human polyclonal IVIG that
contains standardized levels of neutralizing anti-RSV antibodies. It was recently FDA-
approved for prophylaxis in primary immunodeficiency patients and has been used as
a compassionate treatment for RSV LRTI in stem cell transplant patients.
Methods: Two children with T-cell lymphoblastic lymphoma, both undergoing
delayed intensification chemotherapy, were diagnosed with RSV LRTI. They were both
treated with RI-002 under an emergency FDA Investigational New Drug protocol.
Results: Patient 1, a 4-year-old boy, was admitted with fever, neutropenia and
nasal congestion, and diagnosed with RSV infection on hospital day (HD) 5. On HD17, he
was intubated for respiratory failure. IVIG, palivizumab, and daily oral ribavirin were
administered. On HD18, he required high frequency oscillator ventilation, nitric oxide,
and paralysis. He was given RI-002 (1.5 g/kg on HD20 and 0.75 g/kg on HD22). He
was placed on veno-venous extracorporeal membrane oxygenation (ECMO) on HD23. RSV PCR crossing point (Cp) values trended higher, but remained positive (table).
On HD33, RI-002 was re-dosed (0.75 g/kg). Pulmonary compliance and chest CTs improved (figure). On HD52, ECMO support was discontinued. He was discharged on HD88, and currently requires no respiratory support. Patient 2, a 5-year-old boy, was
admitted with fever, neutropenia, nasal congestion, cough, and stridor and diagnosed
with RSV infection (HD1). He required nasal cannula oxygen. IVIG and daily oral ribavirin were administered. He was given RI-002 (1.5 g/kg on HD3 and 0.75 g/kg on HD5). By HD5, he was afebrile; oxygen was discontinued. He was discharged HD6. Conclusion: Human polyclonal IVIG containing standardized levels of neutralizing
anti-RSV antibodies may be useful in the treatment of RSV LRTI in immunocom-
promised children. Future studies on the role of RI-002 in treatment of RSV infection in
immunocompromised children are warranted.

2631. Influenza Associated Intensive Care Unit Hospitalizations and Deaths in
Children. During 2010–2019 in Greece
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Background: Influenza-Associated Intensive Care Unit Hospitalizations and Deaths in
immunocompromised children are warranted. anti-RSV antibodies may be useful in the treatment of RSV LRTI in immunocom-

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2632. Cord Blood Vitamin D and Maternal Vaccination Status Associated with
Decreased Laboratory Confirmed Influenza Infections in Infants
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Background: Maternal influenza vaccination has been demonstrated to reduce influenza infections in infants. Influenza infections generally peak during the winter season, and several studies support the association between low levels of vitamin D during pregnancy and an increase in respiratory infections, including influenza. We examined the effects of vitamin D and maternal influenza vaccination status on laboratory confirmed influenza infections in infants less than 6 months of age.

Methods: Pregnant Bangladeshi mothers were randomized to receive influenza vaccine or pneumococcal vaccine as part of the Mother’s Gift study. Mothers reported breastfeeding frequency, along with episodes of infant respiratory illness with fever, every week for the first 6 months of life. If a respiratory illness with fever was reported, nasal swabs were obtained from the infant and tested with a commercial rapid influenza test. Infants with confirmed influenza disease were matched with four controls by birth month and sex, for a total of 84 controls. We measured 25-hydroxy vitamin D levels from cord blood in all cases and controls. A conditional logistic regression was performed to test the effect of vitamin D on the odds of laboratory confirmed influenza while controlling for birth weight, gestational age, crowding, number of siblings, and socioeconomic status score.

Results: A total of 21 infants had laboratory confirmed influenza disease. There were no significant differences in birth weight, crowding, family size, gestational age, socioeconomic status score, infant gender, and smokers in the home between cases and controls (Table 1). Frequency of maternal influenza vaccine was lower in cases when compared with controls (23.81% vs. 58.33%). Serum vitamin D was lower in cases than in controls (8.73 ± 3.34 vs. 10.67 ± 4.08, Table 2).

Conclusion: Both vitamin D levels and maternal vaccination status have medica-

Table: Pneumococcal data and PCR Crossing Point (Cp) Values from Patient 1

| Hospital Day (HD) | RI-002 treatment | Species type | PCR vaccine | PCR Cp | Viral Culture |
|------------------|------------------|-------------|-------------|--------|--------------|
| HD5              | BAL              | Positive    | 21.1        | RSV Cp | RSV positive |
| HD10             | BAL              | Positive    | 23.2        | RSV Cp | RSV positive |
| HD17             | BAL              | Positive    | 33.8        | RSV Cp | RSV positive |
| HD24             | BAL              | Positive    | 35.7        | RSV Cp | RSV positive |
| HD29             | BAL              | Positive    | 37.9        | RSV Cp | No growth    |
| HD33             | BAL              | Positive    | 40.1        | RSV Cp | No growth    |
| HD34             | BAL              | Positive    | 40.9        | RSV Cp | No growth    |
| HD37             | BAL              | Positive    | 42.1        | RSV Cp | No growth    |

*PCR Cp values are a semi-quantitative determination of strength of positivity NP, nasopharyngeal; BAL, bronchoalveolar lavage; ET, endotracheal; n/a, not available; Cp, crossing point

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