Introduction

- In infants and young children, respiratory syncytial virus (RSV) is the most common cause of bronchiolitis and pneumonia, and a frequent cause of hospitalization.
- Each year in the US, RSV leads to 2.1-2.3 million outpatient visits among children aged <5 y, 100,000-126,000 hospitalizations among children aged <1 y, and 4,000-9,000 deaths. 
- It is unknown how quantitative RSV levels compare between these 2 sample types.

Methods

- Design: prospective enrolment of 1,000 children aged <24 mo diagnosed with RSV infection and admitted to a children’s hospital
- Site: Primary Children’s Hospital (PCH), Salt Lake City, Utah
- Protocol:
  - Age <24 mo
  - Asymptomatic
  - Physician-diagnosed upper/lower respiratory tract infection and confirmed RSV
  - Use of any investigational medicinal products in 28 d prior to screening or use
  - Lived with child where RSV was circulating
  - Adequate English
- Nasopharynx and Mid-Turbinate Swabs
  - Sampling from the anterior nares or mid-turbinate (MT) of infants is less invasive, but similar in sensitivity to NP swabbing for detecting and diagnosing RSV.
- Randomized patients begin with either NP or MT swab in either right or left nostril; 2nd swab uses paired swab type in opposite nostril
- Requirements for inclusion: timeline from 2 different swabs
- Required supplemental factors: clinical and data are collected for each child enrolled
- Analysis: Bland-Altman plot analysis is used to compare viral nasal load data from 2 different swabs.

Patients and Global Impression of Severity

- Objective:
  - Assess impact of novel antivirals to treating clinicians
- Nasopharynx and Mid-Turbinate Swabs
  - Swabs are collected from infants aged <24 months admitted to the hospital with symptomatic RSV infection.
- Parental Procedure Assessment
  - Time from inpatient admission to sample collection <72 h
  - 29 parents/guardians directly observed both swabbing procedures and participated in this assessment.

Demographics

- Racemisn and Mid-Turbinate Swabs
  - Difference in Viral Load Between Swabs, Log10 Copies/mL

Conclusions

- This study has enrolled 40 of the projected 100 patients.
- Interim results indicate that there was a statistical difference between the mean viral loads of the 2 swab types, and the difference can range from -1.9 to 1.4 log_{10} copies/mL.
- Greater differences appeared at lower vs higher viral loads.
- Approximately 80% of parents preferred the MT over NP swab for future use of nasal sampling.
- The clinical and research implications of these results will be interpreted after the study is fully enrolled.

References


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