Clinical Performance of Foam vs. Flocked Swabs Collected from the Anterior Nasal Passage for the Detection of Influenza A & B

Kathy Mack, Douglas Salamon, Erin Stoner, Jose Cuartas, Kimberly Scansen, Bena Bonsu, Amy Leber, and Mario Marcon

Departments of Emergency and Laboratory Medicine, Nationwide Children’s Hospital, Columbus, OH

ABSTRACT

Background: Anterior nares polymerase chain reaction (PCR) testing is a useful method for identifying respiratory viruses and is widely used in the United States. Influenza antigen detection is a common method for rapid detection of influenza virus but limited data on the performance of such tests with respect to the effects of swab composition.

Objective: To compare the performance of two different swabs for the detection of influenza A and B virus in the Anterior Nasal Passage of children presenting to the emergency department for evaluation of viral infection.

Methods: This study compared the agreement between two different types of swabs (foam and flocked) for the detection of influenza virus in the Anterior Nares of children presenting to the ED with suspected viral infection. Two double-well cytospin slides were prepared using 20μL of the cell suspension per well, fixed with acetone and stained.

VIRAL CULTURE

- 20μL of the specimen was inoculated into each of 2 R-Mix vials (Diagnostic Hybrid, Athens, OH; Cat # 96-0102) and incubated at 36°C.
- One vial was stained ~42 hr later with Chemicon SimulFluor Respiratory Screening reagent (Cat # 3296) and if positive for something other than RSV, the companion was scraped and stained with Chemicon Flu A/B direct FA reagent (Cat # 3321) and Chemicon Para 123/Adeno reagent (Cat # 3299).

DIRECT FLUORESCENT ANTIBODY PROCEDURE

- Amplification was performed in an Applied Biosystems 7500 Sequence Detection System.
- Results of each run were determined by comparison with 100% amplification curves with the positive and negative controls.

CONCLUSIONS

- The significant increase in sensitivity of the PCR testing indicates reflex testing in select patient populations is warranted.

ACKNOWLEDGMENTS

We wish to acknowledge and thank the staff of the clinical virology laboratory for their contributions. Carol Allen-Rasoul, Chris Boervongel, Wayne Cullen, Kathy Rehman, June Long, Linda Sherman, and Becky Wiant. Thanks to Copan image library and Brixan for images used in this poster. Thanks also go to Quidel Corporation and Puritan Medical for providing funding and pictures for this poster.