May 11th, 12:30 PM - 12:45 PM

Respiratory Pathogen Panel Use in Hospitalized Infants <2 Months of Age and Impact on Patient>Management.

Edward Lyon
Children's Mercy Kansas City

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Edward Lyon, DO

Pediatric Infectious Diseases Fellow

Children's Mercy Hospital

University of Missouri-Kansas City School of Medicine

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Disclosures

- Nothing to disclose

Background

- Viral testing is varied
  - Rapid testing
  - Respiratory pathogen panels (RPP)
- Utilization not well described in any population
- Infants are a group of special focus
  - Broad work-up for fever
  - Frequently require hospitalization for acute respiratory illnesses (ARI)

Biofire RPP Pathogens	
Viruses	**Bacteria**
Adenovirus	Bordetella parapertussis
Coronaviruses 229E, HKU1, NL63, OC43	Bordetella pertussis
SARS-CoV-2	Chlamydia pneumoniae
Human metapneumovirus	Mycoplasma pneumoniae
Human Rhino/Enterovirus	
Influenza A/B	
Parainfluenza 1-4	
RSV	

Objective

We sought to understand predictive features and impact of RPP use on clinical management in infants <2 months of age

Methods

- New Vaccine Surveillance Network
  - CDC based network at 7 sites
  - Standardized enrollment for ARI
    - <18 years of age, Jackson county residents
    - Symptoms consistent with Acute Respiratory Illness
    - Enrolled within 48 hours of admission
    - Standardized data collection via parent interview, chart review
  - All participants have a research RPP (rRPP)

Methods

- Only some enrolled patients have a clinical RPP (cRPP)
- Analyzed enrolled infants <2 months of age from Kansas City
  - September 2017-September 2021
- Chart Review
  - Demographic characteristics
  - Laboratory studies
  - Antimicrobial management

Results: Demographics

	No cRPP (N=82)	cRPP (N=57)	P-value
Child had a fever during this illness			0.116
Yes	41 (50%)	35 (61.4%)	
Age at Admission			0.172
< 1 Month	39 (47.6%)	34 (59.6%)	
≥ 1 Month	43 (52.4%)	23 (40.4%)	
Pediatric Complex Care Condition Classification System			0.047
0 conditions	57 (69.5%)	48 (84.2%)	
≥ 1 condition	25 (30.5%)	9 (15.8%)	

Results: Lab testing

	No cRPP (N=82)	cRPP (N=57)	P-value
Rapid Influenza Nucleic Acid Amplification Testing			0.171
Not Performed	60 (73.2%)	49 (86.0%)	
Negative	14 (17.1%)	6 (10.5%)	
Positive	8 (9.8%)	2 (3.5%)	
Rapid RSV Nucleic Acid Amplification Testing			0.023
Not Performed	54 (65.9%)	48 (84.2%)	
Negative	6 (7.3%)	4 (7.0%)	
Positive	14 (17.1%)	5 (8.8%)	
Indeterminate	8 (9.8%)	0 (0.0%)	

Results: Lab testing

	No cRPP (N=82)	cRPP (N=57)	P-value
Blood Culture Obtained			< 0.001
Yes	44 (53.7%)	48 (84.2%)	
CSF Culture Obtained			0.096
Yes	26 (31.7%)	26 (45.6%	
Urinalysis Obtained			0.006
Yes	43 (52.4%)	43 (75.4%)	
Urine Culture Obtained	N=43	N=43	0.116
Yes	43 (100%)	39 (90.7%)	

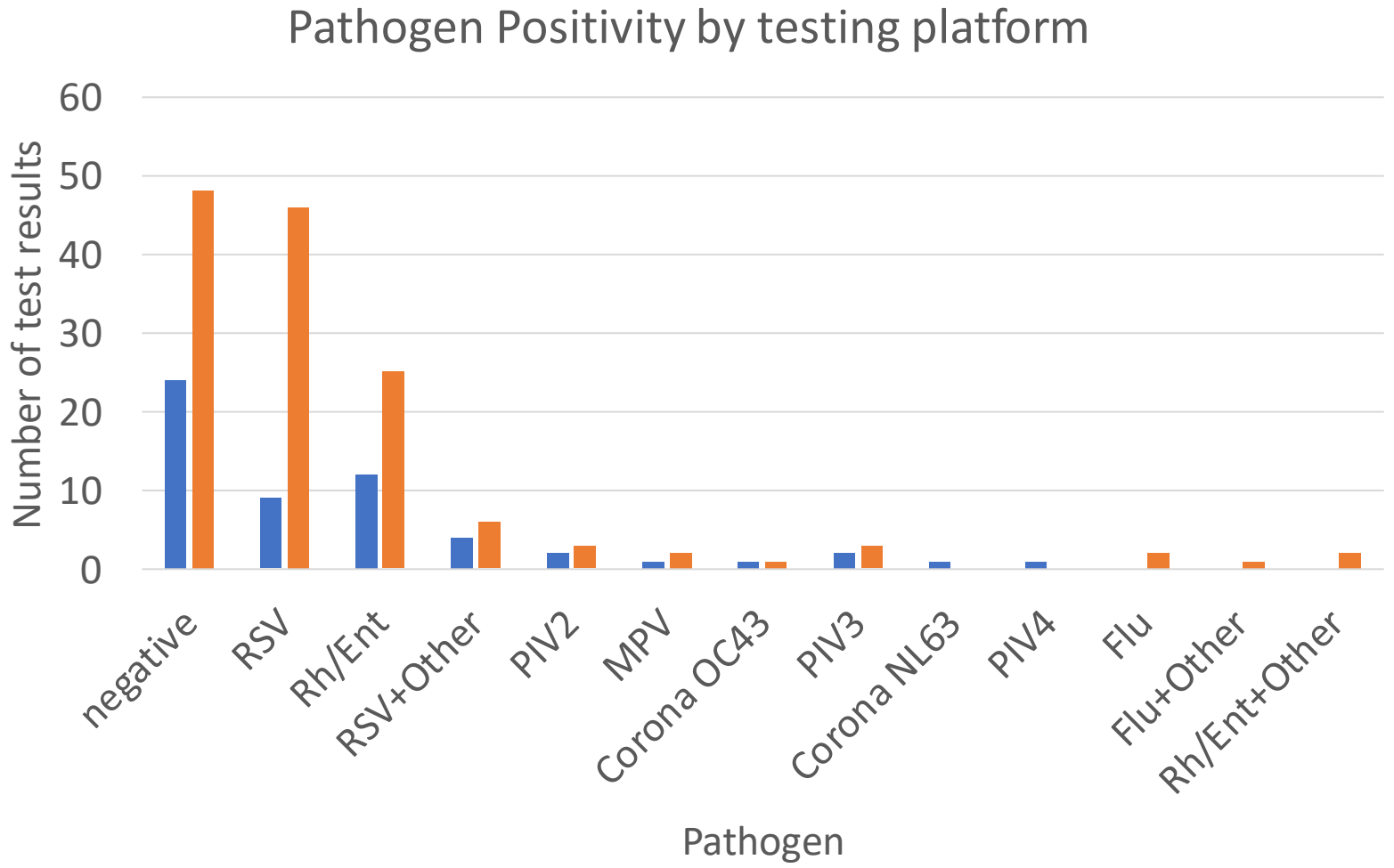
Results: Lab Testing

	No cRPP (N=82)	cRPP (N=57)	P-value
Blood culture results	N=44	N=48	0.462
Positive	2 (4.5%)	4 (8.3%)	
CSF culture results	N=26	N=26	0.490
Positive	2 (7.7%)	0 (0%)	
Urinalysis results	N=43	N=43	0.249
Bacteriuria	4 (9.3%)	1 (2.3%)	
Pyuria	3 (7.0%)	3 (7.0%)	
Both	4 (9.3%)	1 (2.3%)	
Urine culture results	N=43	N=39	0.085
> 50,000 CFU	5 (11.6%)	0 (0%)	

Results: Management

	No cRPP (N=82)	cRPP (N=57)	P-value
Length of stay (hours)			0.710
Median [IQR]	45.9 [37.7, 72.3]	46.8 [29.3, 87.9]	
Antibiotic management			
Received antibiotics	17 (20.7%)	19 (33.3%)	0.116
Antibiotic days– median [IQR]	5 [4, 6]	6 [4, 8]	0.180
Acyclovir management			
Received acyclovir	3 (3.7%)	13 (22.8%)	0.001
Acyclovir days– median [IQR]	1 [1,1]	2 [2,2]	0.036

Results: Pathogen



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Results: Undetected Pathogens

Result	Number of test results
Negative	24
RSV	19
RSV + Other	2
Rhino/Enterovirus	13
Rhino/Enterovirus + Other	2
Parainfluenza 1-4	2
Human metapneumovirus	1

Conclusions

- Minority of participants admitted with ARI had cRPP testing
- Minimal variation in demographics
- 39 viral infections the clinician did not know about
- Continued opportunities for viral testing to influence management
  - 2021 AAP febrile neonate guidelines

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