Hospital-based surveillance of influenza and other respiratory pathogens in patients with severe acute respiratory illness 2016-17, Srinagar, J&K (India)

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INTRODUCTION

- Hospital-based surveillance for severe acute respiratory infection (SARI) cases was established in SKIMS on November 2015.
- We present our results of the continued surveillance of the GIHSN network in Kashmir, India in patients hospitalized for influenza like illness from November 2016 to May 2017.

METHODS

- During the study period from November 2016 till May 2017, all inpatients with suspected respiratory infections who were admitted overnight to the study hospitals were screened daily.
- If a patient met the European Center for Disease Control (ECDC) ILI case definition, a respiratory specimen was tested for influenza and other respiratory pathogens.
- A case report form captured demographics, history of presenting illness, co-morbidities, disease course and outcome.
- Nasal and throat swabs were tested on real-time RT PCR to access the prevalence of influenza and other respiratory viruses by RT PCR using standard protocols.

RESULTS

- From November 2016 to May 2017, a total of 693 patients with suspected respiratory infections were assessed. Of these, 652 (94%) met the ECDC- ILI case definition and were included in the study.
- Of the 652 recruited cases, 322 (49%) were male. Children aged less than 5 years accounted for 14% (n=89) of the eligible patients.
- Of the 652 samples tested, 215 were positive for any virus including 193 single infection and 22 mixed infection.
- RSV was the predominant virus detected in 80 (37.2%) admitted cases followed by Influenza virus (32%) [AH1N=11; AH3N2=21, B-Victoria=37], Rhino virus (14.4%), para-influenza virus (n=30, 14%), HMPV (11%) and adeno virus (1.8%).
- Patients without co-morbidities accounted for about 24% of the admissions whereas 65.7% of the patients had ≤ 2 co-morbidities and 11% had ≥ 2 co-morbidities.
- The need for intensive care or in-hospital death was not significantly different between virus-positive and virus-negative patients.
- 77 (12%) out of 652 patients were prescribed anti-virals for the current ILI episode.
- The vaccination rate among the patients was found to be 2%.

RESULTS contd…

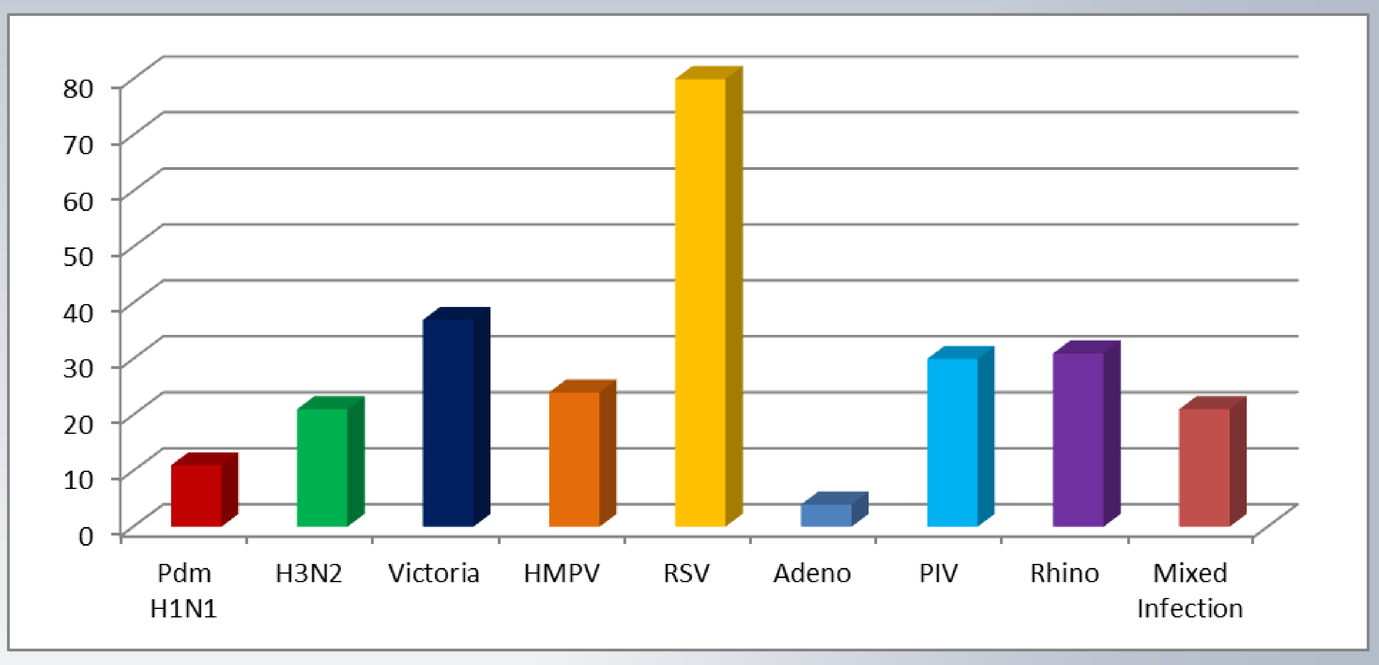

Fig.1 Distribution of respiratory pathogens among hospitalized patients from November 2016-May 2017 in Srinagar, J&K, India

	Virus Positive (n=215)	Virus Negative (n=437)
Males	139 (64.6)	97 (22)
Females	105 (49)	240 (55)
Symptoms		
Fever	140 (65)	356 (81.4)
Malaise	153 (71)	406 (93)
Headache	129 (60)	276 (58.3)
Myalgia	95 (44)	255 (54)
Cough	154 (71.6)	403 (92.2)
Sore throat	23 (10.6)	80 (18.3)
Breathlessness	152 (70.6)	403 (92.2)
Number of underlying co-morbidities		
0	77 (35.8)	73 (16.7)
1-2	123 (57.2)	308 (70.4)
≥2	15 (7)	56 (12.8)
Underlying Conditions		
Cardiovascular disease	64 (29.7)	228 (52)
COPD	72 (33.4)	174 (81)
Asthma	1 (0.46)	5 (1.1)
Diabetes	27 (12.5)	82 (18.7)
Chronic renal disease	6 (2.7)	36 (8.2)
Chronic neuromuscular disease	21 (9.7)	41 (9.3)
Chronic liver disease	0	0
Auto immune disease	10 (4.6)	16 (3.6)
Rheumatologic disease	0	4 (0.91)
Hospitalizations in past 12 months		
0	141 (65.5)	270 (61.7)
1	47 (22)	100 (22.8)
≥2	27 (12.5)	67 (15.3)
OPD visits in past 3 months		
0	55 (25.5)	116 (26.5)
1	29 (13.4)	43 (9.8)
≥2	131 (61)	278 (63.6)
Vaccination ≥14 days from symptom onset	4 (1.8)	9 (2)

Table.1 Characteristics of study among virus positive and virus negative patients.

CONCLUSIONS

- Respiratory viruses are an important cause of illness among hospitalized patients with acute respiratory infection.
- Influenza is an important cause of hospitalization in young children and older adults.
- Vaccine uptake as a whole is poor and sensitization is required to increase the uptake of influenza vaccination among high risk subjects in India.
- Active, prospective, continuous, hospital-based surveillance of influenza and other respiratory viruses is useful in supporting pandemic preparedness for emerging influenza virus infections.

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