

Respiratory Syncytial Virus (RSV) associated hospitalisations in children under 3 years old in the VAHNSI framework during 6 consecutive seasons (2011/2012 to 2016/2017, Valencia, Spain)

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Introduction

RSV causes an important number of hospitalizations every year. Our main goal is to determine the RSV incidence in children under 3 years old (y. o.) in the Valencia Region, Spain.

Methods

The Valencia Hospital Network for the Study of Influenza and other respiratory viruses (VAHNSI) conducts annually a prospective, active-surveillance study. This analysis was performed using data from 2011/2012 to 2016/2017 influenza seasons and was restricted to children under 3 years old.



Figure 1: Map of the Valencia Region in Spain.

All consenting admissions of non-institutionalized children, resident in a participating hospital catchment area, not discharged from a hospital within 30 days and having been hospitalized within 7 days of the onset of symptoms were included in the study.

Demographic and clinical information was collected by interviewing legal tutors and/or by clinical records review.

Swabs were tested by real-time reverse transcription polymerase chain reaction (RT-PCR).

Hospitalization incidence rates were calculated by age group (<1, 1-<2 and 2-<3 years old) and season. RSV positivity rates and reasons for hospitalization were provided by age group (0, 1, 2, 3, 4, 5, 6 to <12, 12 to <24 and 24 to <36 months).

Results

The main reasons for admission among RSV cases were acute respiratory infection (ARI), cough, dyspnea and fever, with differences across age group.

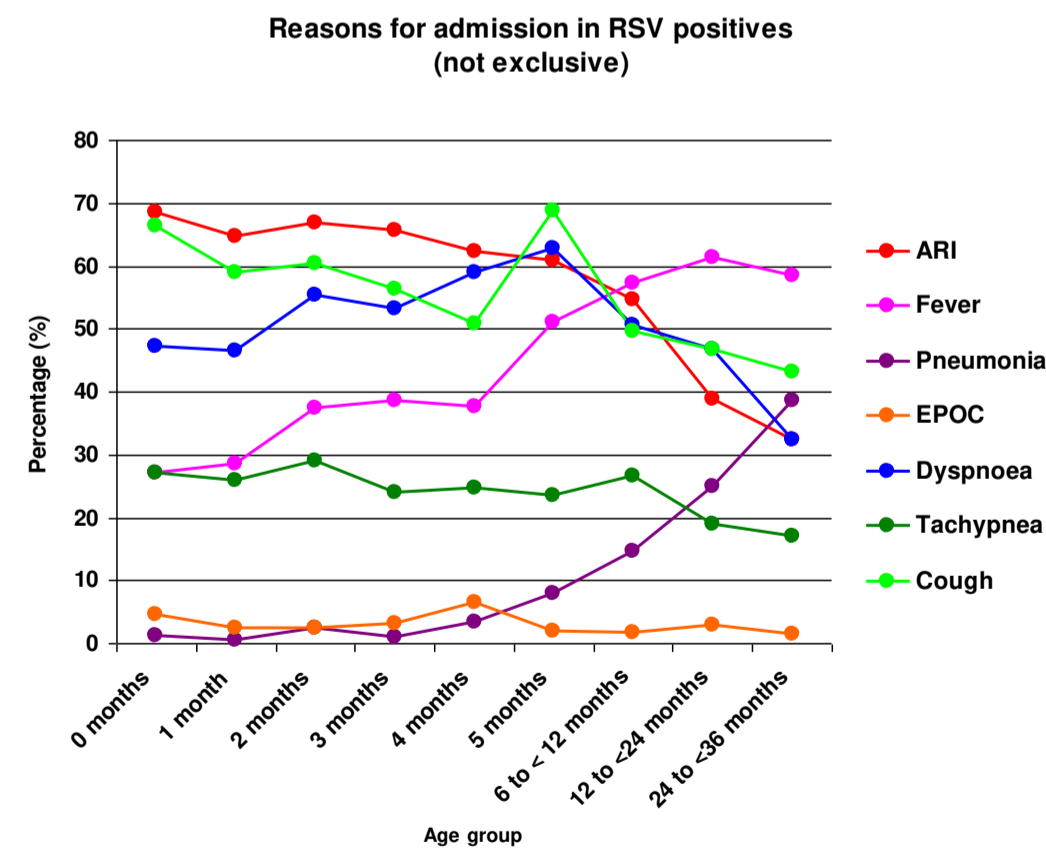


Figure 2: Main reasons for admission in the VAHNSI study for patients under 3 years old in the Valencia Region, seasons 2011-2012 to 2016-2017.

The highest hospitalization rate was found in infants less than 1 year old, taking its highest value in the 2016/2017 season (1475.89 per 100,000) and its lowest value in the 2013/2014 season (393.95 per 100,000).

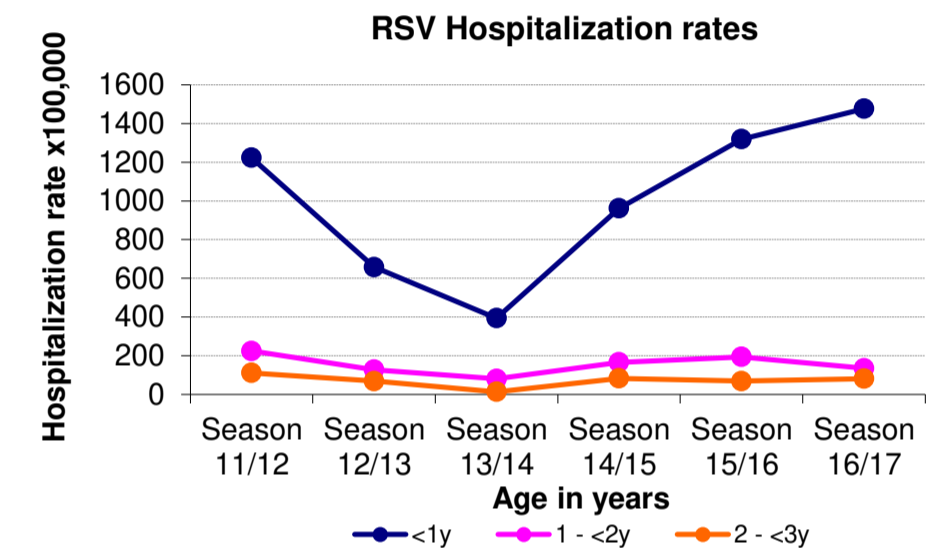


Figure 3: RSV hospitalization rates in patients under 3 years old in the Valencia Region tested by RT-PCR, seasons 2011-2012 to 2016-2017.

Globally, RSV positivity percentages were higher in patients 2, 3 or 4 months of age. RSV positivity percentages were lower in patients aged 0 and 1 month, and in patients 5 months of age or older, having a clear downward trend from 6 to 36 months of age.

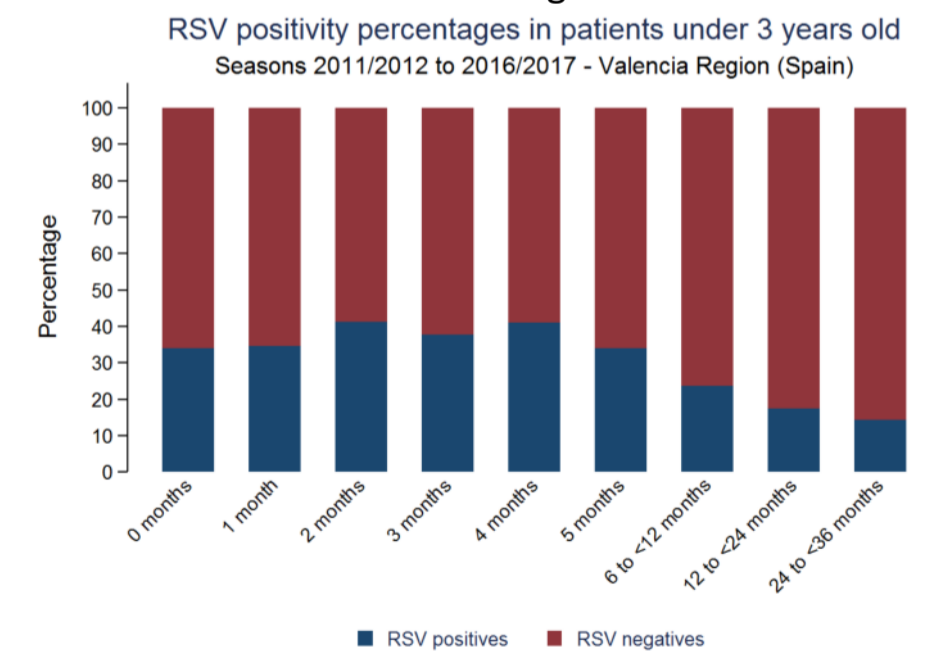


Figure 4: RSV result of hospitalized patients under 3 years old in the Valencia Region tested by RT-PCR, seasons 2011-2012 to 2016-2017.

Conclusions

RSV mostly affects very young children, especially babies less than 6 months of age, entailing an important social and economic repercussion.