

Epidemiological profile of hospitalizations of Severe Acute Respiratory Infections by Respiratory Syncytial Virus and associated factors to ICU hospitalization and death in a Brazilian capital

JULIA JORDANA FREITAS LIMA¹, VINICIUS DA SILVA OLIVEIRA¹, MARÍLIA BELMIRA DE CASTRO RÊGO², YVES MAURO FERNANDES TERNES²
Academic of the Faculty of Medicine of the Federal University of Goiás¹, Institute of tropical Pathologies and Public Health, Federal University of Goiás²
julyajordana@gmail.com

BACKGROUND

Severe Acute Respiratory Infections (SARI) is a disease transmitted by airway and by the contact with secretions. Given the epidemiological relevance and impact of Respiratory Syncytial Virus (RSV) on the incidence, transmissivity and morbimortality < 5 years old, associated with SARI, this study aims to evaluate the characteristics of children at this age hospitalized and identify associated factors to gravity and death by SARI, comparing etiologies.

METHODS

Epidemiological profile of hospitalizations of SARI by RSV in the city of Goiânia, a central region of Brazil. Data was from notifications registered at the Notifiable Diseases Information System (SINAN) between 2013 and 2018. It was established that children with RT-PCR positive to RSV and negative to other viruses as Group 1 (G1) and all notifications of children <5 years old that don't fulfill these criteria as Group 2 (G2), to comparison. Descriptive statistics was by absolute and relative frequencies. Risk factors were evaluated in a logistic regression model, where the variables passed at a bivariate model and those that showed a P-Value <0.2 were inputted in a multivariate model. The analysis was conducted at a level of significance of 5% at Stata 16.0.

RESULTS

In the period, 295 hospitalizations by SARI were notified in <5 years old, from which 20.3% were by RSV. In these, the majority was female (51.7%), <2 years old (76.7%). 6.7% had pneumopathy and 3.4% a neurological disease. Comparing with G2 (15,3%), children with RSV had less myalgia (5%) (P-value= 0.035) and Intensive Care Unit (ICU) hospitalization (11.7% of G1 and 34.5% of G2, P= 0,001). In the multivariate analysis, the infection by RSV (Odds Ratio= 0.26 and CI= 0.11; 0.60) and immunization for Influenza (OR= 0.56 and IC= 0.31; 0.99) were protective to the outcome "ICU hospitalization", whereas comorbidities were risk factors (OR= 2.76 and CI=1.43; 5.3).

Table 1: Associated factors to Intensive Care Unit hospitalization for the registered cases of SARI in Goiânia between 2013 to 2018.

Variable	N(%)	Multivariate logistic regression		
		OR	IC95%	P Valor
Immunization for Influenza	23 (24.5)	0.5568	0.3100; 0,9998	0,050*
RSV	7 (11.7)	0.2578	0.1102; 0,6032	<0.002*
Other respiratory viruses	11 (45.8)	1.7359	0.7248; 4,1574	0.216
Comorbidities	24 (48)	2.7566	1.4334; 5,3009	0.002
Age group				
2 to < 5 years	25 (25.3)	0.7132	0.4142; 1,2282	0,223

To the outcome "death by SARI", only the protective association by the treatment with antivirals (OR= 0.15 and CI= 0.05; 0.43) was found. There were no deaths by RSV during the period.

CONCLUSIONS

Children hospitalized due RSV infection had less chance of evolving with ICU hospitalization, probably related to host factors and the strains of etiologic agents locally circulating. Also, children immunized to Influenza has less chance of evolving to ICU care, as this virus is an important cause of severity in this group. The outcome was bigger in children with comorbidities, what must be associated with its decompensation and immunologic factors. Children that used antivirals in the treatment had less chance of death, what, with further studies, can lead to changes in the routine of SARI treatment in children.

Relevant Financial relationships

All authors of the abstract and poster have nothing to disclose about any relevant financial relationships that could cause a conflict of interest.

REFERENCES

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