276. Viral Genomic Load, Cytokine Profiles and Life-Threatening Respiratory Syncytial Virus Infection in Previously Healthy Infants
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Background. Respiratory syncytial virus (RSV) is a common cause of lower respiratory tract infections (LRTIs) in infancy and childhood, and severe RSV disease can result in hospitalization and even death.

Objective. To analyze the association between viral load and cytokine expression with severe RSV disease in previously healthy infants.

Methods. Consecutive infants aged ≤ 6 months (n = 20), who were admitted to the pediatric intensive care unit (PICU) at the Hospital de Niños “Ricardo Gutiérrez” between November 2017 and October 2018, were included in the study. Nasopharyngeal aspirates were collected from all patients and viral load was measured using qPCR. Cytokines were measured in the nasopharyngeal aspirates using a Novex multiplex assay.

Results. The median age of the patients was 2.1 months (IQR: 0.2-5.1 months) and the median viral load was 1.2×10^8 copies/mL (IQR: 2.8×10^7-8.1×10^9 copies/mL). The most commonly measured cytokines were TNF-α, IL-9, IL-10 and IL-17. A positive correlation was observed between viral load and the expression of IL-9 (r = 0.59, P = 0.01) and IL-10 (r = 0.61, P = 0.007) cytokines. No correlation was observed between viral load and the expression of TNF-α or IL-17 cytokines.

Conclusion. This study suggests that high viral load and cytokine expression are associated with severe RSV disease in previously healthy infants. Further studies are needed to validate these findings and to determine the optimal cutoff points for viral load and cytokine expression that can predict severe RSV disease.

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275. Clinical Outcomes of Elderly Individuals Presenting with Acute Respiratory Infections
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Background. Acute respiratory infections (ARIs) are one of the most common causes of hospitalization and mortality in the elderly. The goals of this study were to evaluate the demographics, clinical characteristics, and outcomes of elderly patients presenting to an urban academic medical center with ARIs.

Methods. This was a retrospective cohort study of all patients aged ≥ 65 years who presented to the hospital with an ARI from 2014 to 2017. The primary outcomes of interest were hospital admission, intensive care unit (ICU) admission, and mortality. Multivariable logistic regression was used to identify factors associated with hospital admission and ICU admission.

Results. A total of 4,920 patients met the inclusion criteria. The median age was 79 years (IQR: 73-85), and 59% were female. The most common ARIs were influenza (26.5%), pneumonia (15.4%), and chronic obstructive pulmonary disease (14.7%). The overall hospital admission rate was 41.9%, with 14.2% requiring ICU admission. The most common comorbidities were cardiovascular disease (53.5%), chronic lung disease (32.4%), and diabetes mellitus (27.5%). On multivariable analysis, older age (odds ratio [OR] 1.02 per year increase, 95% CI 1.01-1.03, P < 0.001) and history of chronic lung disease (OR 1.67, 95% CI 1.14-2.45, P = 0.01) were associated with increased odds of hospital admission. The median length of hospital stay was 4 days (IQR: 2-10). The overall mortality rate was 2.4% (121/4,920).

Conclusion. Elderly patients with ARIs are at increased risk for hospitalization and mortality, with older age and chronic lung disease being independent risk factors. Further studies are needed to identify additional factors that may be modifiable and reduce the risk of adverse outcomes in this population.

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