Letter to the Editor / *Editöre Mektup*

DOI: 10.5578/ced.20229613 • *J Pediatr Inf 2022;16(4):e292-e293*

Significant Increase in SIDS Cases During the RSV Outbreak

RSV Salgını Sırasında SIDS Olgularında Dikkat Çekici Artış

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Cite this article as: Özdemir İ, Tekin D, Kendirli T. Significant increase in SIDS cases during the RSV outbreak. J Pediatr Inf 2022;16(4):e292-e293.

To the Editor,

Sudden Infant Death Syndrome (SIDS) is defined as the unexpected death of an infant under the age of one year that cannot be explained by autopsy, a full clinical history, and a thorough case study. Formerly known as crib death, sudden infant death syndrome is still the greatest cause of death in children aged one month to one year. Its current prevalence is reported to be less than one in per 1000 live births, and it is more common in males. Deaths in the first year, which are 20 times higher than deaths from any cause between the ages of 1-18, highlights the importance of identifying SIDS, which is more common in males (2). SIDS causes can be grouped as maternal and/or child-related factors and environmental factors. The most common ones are mother's young age, smoking exposure during pregnancy, prematurity, prone positioning of the child, use of soft mattresses, bed sharing, and excessive ambient temperature. The most common causes of sudden infant death syndrome are viral respiratory infections. With this letter, we sought to bring attention to viral infections, which are one of the causes of sudden infant death syndrome and seen more commonly in the winter months, especially affect young infants and children with underlying disorders, and demonstrate that RSV infections seen in the community between November 22 and December 5 last year, even if they may have progressed with mild findings that did not catch the attention of the family, could have led to SIDS with the combined effect of other factors playing a role in the etiology, and could be fatal.

Case 1

A two-month-old female patient was brought to our hospital in the first week of December 2021 after being resuscitated by 112. For two days, the patient had a mild temperature and cough. When the mother came to check on the patient after putting her to sleep, she discovered she had turned blue and called an ambulance. The paramedics started CPR on the patient, who had no pulse or respiration. The patient's pulse and blood pressure returned after 20 minutes of CPR, and she was moved to the pediatric intensive care unit and intubated. Because it was known that the previously healthy patient had a history of viral infection, a respiratory tract swab sample was taken, and a viral multiplex PCR test was performed. The patient died after 18 days in the intensive care unit as a result of brain death. The respiratory viral multiplex PCR test revealed positive results for RSVA/B, rhinovirus, and bocavirus.

Case 2

In the first week of December 2021, the patient with a corrected age of three months and a calendar age of six months was brought to our hospital by his mother within five minutes

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Received: 28.02.2022 **Accepted:** 27.04.2022 **Available Online Date:** 14.12.2022

because he was not breathing. He had a twin, had been hospitalized in the neonatal ICU for multiple days in the postnatal period, and had a cough, nasal congestion, and slight fever for two days. The patient was started on CPR and was pronounced dead despite 45 minutes of intervention and advanced airway management. Based on the experience we gained from the previous patient in the pediatric emergency room, the patient's history of viral infection, and the possibility of an RSV outbreak, we requested a respiratory viral multiplex PCR test to explore the cause of SIDS, which was positive for RSVA/B, bocavirus and adenovirus. We suspected that the patient's unexpected arrest was caused by a respiratory viral infection.

We suspected RSV was the cause of SIDS in infants we saw in a short period of time who did not have an unexpected or chronic condition and had no history of sibling death. The post-arrest RVP in the first patient and the post-mortem RVP in the second patient revealed RSV A/B positivity. Aside from the two cases described, we suspected another RSV-related mortality, whom we were unable to verify due to technical difficulties, in another previously healthy two-month-old infant who presented to our clinic with cardiac arrest after experiencing viral infection symptoms for a few days.

Death from infectious diseases is a major cause of mortality all around the world. According to a systematic evaluation of 143 publications from 2000 to 2016, respiratory tract infections were the leading cause of mortality (3). Histopathological examinations revealed that upper respiratory tract diseases contribute to sudden infant death. Viruses are suspected to play a role in the multifactorial pathogenesis of sudden infant deaths. To further understand the possible link between viral infections and sudden infant death, extensive sample and testing using currently available molecular technologies are required (4).

Viral respiratory tract infections are one of the leading causes of morbidity and mortality, especially in children, the elderly and immunocompromised individuals. In the autopsies of 834 sudden death cases between 2013 and 2017, at least one respiratory tract virus was found in 45.4% (379) of 191 pediatric cases between 0-1 months and 593 pediatric cases between one month and 18 years of age. Human rhinovirus (HRV), adenovirus (AdV), and RSV A/B were the most prevalent, respectively. Less frequently, pediatric patients with multiple viruses, especially bocavirus, were also reported. In both of our cases, bocavirus was detected in addition to RSV. During the same period, there was an increase in bocavirus infections in our country and knowing that this virus would also contribute to the current incidents, we reasoned that RSV may be the most common cause, as suggested by the literature (5). Morichi et al. defined enterovirus, parainfluenza virus, RSV A/B and rotavirus as agents in a series of four cases associated with viral infections. CSF from this cohort contained elevated amounts of inflammatory cytokines and chemokines (6).

According to our current understanding and the experience we have gathered from our patients who presented to our hospital with cardiac arrest in the last two months and died despite all efforts, viral upper respiratory tract infections can induce SIDS, particularly in the first three months of life. As a result, if babies in this age group show signs of upper respiratory tract infection and, particularly, respiratory distress, seeking medical attention and, if there is lower respiratory tract and lung involvement, hospitalization will avoid the development of SIDS. It should be noted that, while rare, mild respiratory tract infections such as RSV in young infants may be a possible cause of SIDS, and we believe that avoiding other probable and/or triggering risk factors during the viral infection may be beneficial.

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