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Abstract from Current Literatures

Presentations and Outcomes Among Infants ≤90 Days With and Without SARS-CoV-2

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Objectives: To compare symptoms and outcomes among infants aged d˜90 days tested for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in a broad, international sample of emergency departments (EDs).

Methods: This was a secondary analysis of infants aged 0 to 90 days with suspected SARS-CoV-2 infections tested using molecular approaches and with 14-day follow-up. The parent studies were conducted at 41 EDs in 10 countries (the global Pediatric Emergency Research Network; March 2020–June 2021) and 14 EDs across Canada (Pediatric Emergency Research Canada network; August 2020–February 2022). Symptom profiles included presence and number of presenting symptoms. Clinical outcomes included hospitalization, ICU admission, and severe outcomes (a composite of intensive interventions, severe organ impairment, or death).

Results: Among 1048 infants tested for SARS-CoV-2, 1007 (96.1%) were symptomatic at presentation and 432 (41.2%) were SARS-CoV-2–positive. A systemic symptom (any of the following: Apnea, drowsiness, irritability, or lethargy) was most common and present in 646 (61.6%) infants, regardless of SARS-CoV-2 status. Although fever and upper respiratory symptoms were more common among SARS-CoV-2–positive infants, dehydration, gastrointestinal, skin, and oral symptoms, and the overall number of presenting symptoms did not differ between groups. Infants with SARS-CoV-2 infections were less likely to be hospitalized (32.9% vs 44.8%; difference ˜11.9% [95% confidence interval (CI) ˜17.9% to ˜6.0%]), require intensive care (1.4% vs 5.0%; difference ˜3.6% [95% CI ˜5.7% to ˜1.6%]), and experience severe outcomes (1.4% vs 5.4%; difference ˜4.0% [95% CI ˜6.1% to ˜1.9%]).

Conclusion: SARS-CoV-2 infections may be difficult to differentiate from similar illnesses among the youngest infants but are generally milder. SARS-CoV-2 testing can help inform clinical management.

Key Words : COVID-19, Emergency Medicine, Hospital Medicine

Prevalence of Sleep Disruption and Obstructive Sleep Apnea in Children with Cerebral Palsy Using Diagnostic Polysomnography

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Introduction: Sleep disruption and sleep disordered breathing have been extensively reported in patients with cerebral palsy (CP) by studies conducted using questionnaires. Polysomnography (PSG) is the gold standard for objectively determining sleep architecture and sleep disorder breathing (SDB) in children and in adults. In this study, we aim to evaluate sleep architecture abnormalities and estimate prevalence of obstructive sleep apnea (OSA) in CP patients using PSG.

Methods: All patients (0-18 year) with physician confirmed diagnosis of cerebral palsy who underwent diagnostic PSG study between September 2019 and June 2023 at a tertiary pediatric hospital were included in the study. Clinical and PSG data were retrospectively collected, summarized and reported. Sleep staging and sleep related respiratory events were scored following AASM criteria. OSA diagnosis was considered present if apnea hypopnea index (AHI) was ≥1.5 events per hour of total sleep time. Comparison between patients with OSA and patients with no OSA was also conducted. Student t test or Qui square analysis were used as appropriate. P value >0.05 was considered significant.

Results: A total of 65 patients (31 male and 34 females) were included in the study. The mean (range) age was 7.2 (0.9 - 18) years. Majority of patients had quadriplegic CP. Only 12 (18.4%) patients had history

of snoring or sleep apnea. Mean (range) sleep efficiency was 69.9% (44%-95%). Mean (range) sleep latency was 52.7 (1-270) minutes. Mean (range) REM latency was 118.8 (2.5-341) minutes. Mean (range) wakefulness after sleep onset was 102.6 (0.5-273.7) minutes. Duration of all sleep stages (REM, N1, N2, N3) expressed as percentages of total sleep time was within normal limits. The mean (range) AHI was 4.2 (0-38) events/hour. The prevalence of OSA was estimated at 54%. However, only 12 patients had documented symptoms related to OSA. The OSA group was younger compared to the non-OSA group and less likely to have seizure disorders. There was no significant difference in the frequency of reported symptoms between both groups.

Conclusion: We found normal sleep architecture in patients with CP but decreased sleep efficiency and high prevalence of OSA using PSG. History of sleep related respiratory symptoms was not frequent and did not correlate with PSG detected OSA. Therefore, screening for sleep disruption and OSA using PSG in these patients should be considered.

Keywords: Cerebral Palsy; Sleep Disorder Breathing; Obstructive Sleep Apnea; Polysomnography