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Impact of the COVID-19 pandemic on pediatric migraine hospitalizations in northeast Brazil: a pre-post analysis (2017–2024)

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Introduction

Migraine is a leading cause of disability in children and adolescents, with a significant impact on quality of life and hospital costs. The COVID-19 pandemic deeply changed healthcare utilization patterns, but its effect on pediatric migraine hospitalizations in Northeast Brazil has not yet been analyzed.

Objective

To compare the profile of migraine hospitalizations in children and adolescents (0–19 years) in Northeast Brazil before (2017–2019) and after (2021–2024) the COVID-19 pandemic, excluding 2020 because of the atypical lockdown period.

Methods

This was an ecological time-series study using data from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS) accessed via DATASUS. All hospitalizations with a primary diagnosis of migraine (ICD-10 G43) of residents in the Northeast region, aged 0–19 years, were included. The years analyzed were 2017–2019 (pre-pandemic) and 2021–2024 (post-pandemic). The year 2020 was excluded because it represented an atypical period of restrictions and underreporting. The variables studied were: number of hospitalizations, total costs (BRL), length of stay (days), and in-hospital deaths.

Results

In the pre-pandemic period (2017–2019), there were 1,706 hospitalizations (annual average 568.7), with total costs of BRL 606,529.11, mean length of stay of 3.9 days, and 4 deaths. In the post-pandemic period (2021–2024), hospitalizations increased to 2,557 (annual average 639.3), a 49.9% rise. Total costs jumped to BRL 1,856,779.66 (a 206.1% increase). Mean length of stay increased to 4.6 days (+17.9%). Deaths rose from 4 to 17 (a 325% increase). The year 2023 had the highest number of hospitalizations (776), highest costs (BRL 735,863.23), and highest number of deaths (7).

Conclusion

There was a marked increase in hospitalizations, costs, length of stay, and mortality due to pediatric migraine in Northeast Brazil in the post-pandemic period compared with the pre-pandemic period. These findings suggest a possible worsening of case severity or an indirect impact of the pandemic on access to and management of migraine in children and adolescents. Regional strategies to strengthen outpatient care and prevent high-cost, high-mortality hospitalizations are needed.

Keywords:
Migraine
Hospitalization
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COVID-19
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