Fenotipos de bronquiolitis y su asociación con desenlaces clínicos en pacientes pediátricos de un hospital de tercer nivel en Barranquilla, 2022–2025

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RESUMEN

Introducción: La bronquiolitis es una de las principales causas de morbilidad respiratoria en lactantes, especialmente en países de ingresos medios como Colombia. Su presentación clínica es heterogénea y puede agruparse en fenotipos que reflejan diferentes perfiles de gravedad, pero su utilidad en la predicción de desenlaces clínicos aún requiere mayor evidencia.

Objetivo: Determinar la prevalencia de los fenotipos de bronquiolitis y la asociación con desenlaces clínicos: ingreso a UCI, duración de hospitalización y el requerimiento de oxígeno suplementario en pacientes de un hospital pediátrico de tercer nivel en Barranquilla, Atlántico Colombia en el periodo 2022 a 2025-1.

Materiales y métodos: Estudio observacional, descriptivo transversal con fase analítica, de carácter retrospectivo, basado en los registros clínicos de pacientes con diagnóstico de bronquiolitis aguda atendidos entre 2022 y 2025. Se seleccionaron 227 casos mediante muestreo aleatorio simple a partir de una población institucional de 2.918 pacientes. Se describieron las características clínicas y se evaluaron asociaciones mediante análisis bivariado y modelos multivariados (regresión binomial negativa y regresiones logísticas ajustadas).

Resultados: El fenotipo B fue el más frecuente (47,6%), seguido de A, C y D, con un patrón estacional entre junio y agosto. En los modelos ajustados, el fenotipo C mostró una asociación independiente con una mayor duración de la hospitalización (ORa = 1,129; p = 0,006; IC95%: 1,035–1,231). Para el requerimiento de oxígeno, los fenotipos A, B y C presentaron mayores probabilidades en comparación con el fenotipo D (A: ORa = 8,56; p = 0,008; B: ORa = 10,87; p = 0,002; C: ORa = 492,56; p < 0,001). En cuanto al ingreso a UCI, los fenotipos B y C mostraron las asociaciones más altas (B: ORa = 4,688; p = 0,045; C: ORa = 142,41; p < 0,001). Edad, sexo y peso no fueron predictores independientes en ninguno de los modelos multivariados.

Conclusiones: Los fenotipos clínicos de bronquiolitis permiten una estratificación efectiva del riesgo clínico en pacientes pediátricos. En especial, el fenotipo C debe considerarse de alta complejidad, dado su fuerte asociación con oxigenoterapia, ingreso a UCI y estancias prolongadas. Esta herramienta, de fácil implementación, puede mejorar la calidad asistencial y la eficiencia hospitalaria en contextos con recursos limitados.

Palabras clave: Bronquiolitis, bronquiolitis viral, fenotipos bronquiolitis, oxígeno, consumo de oxígeno, obstrucción de las vías aéreas.

ABSTRACT

Introduction: Bronchiolitis is one of the leading causes of respiratory morbidity in infants, particularly in middle-income countries such as Colombia. Its clinical presentation is heterogeneous and can be grouped into phenotypes that reflect different severity profiles; however, evidence regarding their usefulness in predicting clinical outcomes remains limited.

Objective: To determine the prevalence of bronchiolitis phenotypes and their association with clinical outcomes—ICU admission, length of hospital stay, and the need for supplemental oxygen—in patients from a tertiary-level pediatric hospital in Barranquilla, Atlántico, Colombia, during the period 2022 to 2025-1.

Materials and methods: This was an observational, descriptive, and analytical retrospective study based on clinical records of patients diagnosed with acute bronchiolitis between 2022 and 2025. A total of 227 cases were selected through simple random sampling from an institutional population of 2,918 patients. Clinical characteristics were described, and associations were evaluated using bivariate analyses and multivariable models (negative binomial regression and adjusted logistic regressions).

Results: Phenotype B was the most frequent (47.6%), followed by A, C, and D, with a seasonal pattern peaking from June to August. In adjusted models, phenotype C was independently associated with longer hospital stay (aOR = 1.129; p = 0.006; 95% CI: 1.035–1.231). For oxygen requirements, phenotypes A, B, and C showed higher odds compared with phenotype D (A: aOR = 8.56; p = 0.008; B: aOR = 10.87; p = 0.002; C: aOR = 492.56; p < 0.001). Regarding ICU admission, phenotypes B and C demonstrated the strongest associations (B: aOR = 4.688; p = 0.045; C: aOR = 142.41; p < 0.001). Age, sex, and weight were not independent predictors in any multivariable model.

Conclusions: Clinical phenotypes of bronchiolitis allow effective stratification of clinical risk in pediatric patients. In particular, phenotype C should be considered of high complexity, given its strong association with the need for oxygen therapy, ICU admission, and prolonged hospital stays. This easily implementable tool may contribute to improved quality of care and hospital efficiency in resource-limited settings.

Key words: Bronchiolitis, viral bronchiolitis, bronchiolitis phenotypes, oxygen, oxygen consumption, airway obstruction.

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