Evaluating adherence to clinical guidelines for croup management and its impact on emergency department length of stay and patient outcomes.

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Objective: To evaluate adherence to clinical guidelines for croup management and its impact on emergency department (ED) length of stay and patient outcomes at pediatric emergency departments of major tertiary care hospitals in Sindh.

Background: Croup is a common viral respiratory illness in young children and a frequent cause of ED visits. Clinical guidelines recommend systemic corticosteroids and nebulized epinephrine for severe cases to improve outcomes and optimize resource utilization. Adherence to these guidelines has been associated with reduced hospital admissions, shorter ED stays, and lower critical care admissions without increasing adverse events.

Materials and Methods: This retrospective cross-sectional study was conducted in Child Life Foundation-supported pediatric emergency departments across Sindh from October 1, 2024, to March 31, 2025. Electronic medical records of 693 patients aged 6 months to 10 years diagnosed with croup were reviewed. Primary outcomes included ED length of stay and patient disposition.

Results: Among 693 patients, 583 (84.1%) received steroids, and 564 (81%) received nebulized epinephrine within the first hour of ED arrival, while delayed treatment occurred in 76 (11%) and 99 (14%) patients, respectively. ED length of stay ranged from <1 to 98 hours for timely treatment versus >1 to 132 hours for delayed treatment. Admission rates were lower with the timely administration of steroids (6.9% vs 14%) and nebulized epinephrine (7.4% vs 11%). Timely treatment was also associated with higher discharge rates.

Conclusion: Prompt administration of steroids and nebulized epinephrine within the first hour was associated with shorter ED stays, lower admission rates, and improved patient outcomes, highlighting the importance of guideline-based croup management.

Keywords: Croup management, clinical guidelines, pediatric emergency, steroids, nebulized epinephrine, length of stay, hospital admission, discharge rates, timely treatment, Child Life Foundation.

Conflict of interest
I declare that there is no conflict of interest regarding the publication of this article.

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