

## Documents

Abdullah, A.F.<sup>a</sup>, Alsagoff, S.A.S.A.<sup>a</sup>, Rusli, M.F.<sup>b</sup>, Helmi, M.A.M.<sup>a</sup>

**Comparing Treatment Effectiveness and Costs for Bronchospasm in Hospitalized Children: Salbutamol Inhaler with Spacer vs. Nebulizer – A Retrospective Study**

(2024) *Malaysian Journal of Medicine and Health Sciences*, 20, pp. 73-79.

DOI: 10.47836/mjmhs.20.s3.11

<sup>a</sup> Department of Paediatric, Kulliyah of Medicine, International Islamic University Malaysia, Pahang, Kuantan, 25200, Malaysia

<sup>b</sup> Department of Community Medicine, Kulliyah of Medicine, International Islamic University Malaysia, Pahang, Kuantan, 25200, Malaysia

**Abstract**

**Introduction:** The study, conducted at Sultan Ahmad Shah Medical Centre, aimed to compare outcomes in bronchospasm-treated children using metered-dose inhalers (MDIs) with spacers versus nebulizers. The primary focus was on assessing the length of stay (LOS) and treatment costs associated with each modality. The hypothesis anticipated no significant differences between the MDI and nebulizer groups. **Materials and methods:** This retrospective cohort study, spanning from January to December 2022, involved 128 children aged between two and 12 years old. The nebulizer group data covered the period from June 2019 to March 2020, while the MDI group data spanned from March 2020 to December 2021. Patient selection utilized universal sampling, and data were extracted from patient notes. The methodology included the use of a structured pro-forma for data collection, evaluating variables such as LOS, treatment costs, cumulative salbutamol dose, heart rate, and clinical parameters. **Results:** The results revealed no significant difference in LOS between the two groups. However, the MDI group demonstrated lower costs compared to the nebulizer group (RM10,486.00 vs. RM12,273.00 each treatment per hospital stayed). While differences in cumulative salbutamol dose were observed, no significant distinctions were noted in other clinical parameters. **Conclusion:** The study concluded that MDI with a spacer showed similar ward stay durations but with lower costs compared to nebulizers. This underscores the economic and practical benefits of using MDI, including a reduced risk of disease transmission and decreased nursing workloads. *Malaysian Journal of Medicine and Health Sciences* (2024) 20(SUPP3): 73-79. © 2024 Universiti Putra Malaysia Press. All rights reserved.

**Author Keywords**

Beta-2 agonist; Cost; Length of stay; Metered-dose inhaler; Nebuliser

**Funding details**

SRG21-013-0013

**Funding details**

We would like to express our sincere gratitude to everyone who contributed to the successful completion of this research project. We extend our thanks to SASMEC @ IIUM Clinical Research Centre for their financial support (Grant SRG21-013-0013). Special recognition is extended to our enumerators and research assistants who generously contributed their time and energy, making this research possible. We also appreciate the efforts of research officer and our colleague Dr Taufiq Hidayat Hasan whose dedication enhanced the quality of our research.. This research would not have been possible without the collective support of these individuals and organizations.

**Correspondence Address**

Helmi M.A.M.; Department of Paediatric, Pahang, Malaysia; email: muhdalwi@iium.edu.my

**Publisher:** Universiti Putra Malaysia Press

**ISSN:** 16758544

**Language of Original Document:** English

**Abbreviated Source Title:** Malays. J. Med. Health Sci.

2-s2.0-85195402724

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus