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The Efficacy of Nebulized Soluble Mannitol and Comparison with 5% Hypertonic Saline on Pulmonary Function of Children with Cystic Fibrosis: A Letter to Editor

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Dear Editor,

I read with interest the distinguished study by Sadr et al. published in the 2019 August issue of Journal of Comprehensive Pediatrics (1). On employing spirometry to evaluate pulmonary function tests (PFT), the authors studied the effect of inhaled soluble mannitol on the lung function, and its comparison with 5% inhaled hypertonic saline (HTS) in a cohort of Iranian pediatric patients with cystic fibrosis (CF). The authors found that the mean of forced expiratory flow in 1 second (FEV1), forced vital capacity (FVC), and forced expiratory flow between 25% and 75% of FVC (FEF25-75%) in the mannitol group before the treatment were 96 ± 30.5%, 99 ± 27%, and 76.3 ± 36.3%, and after the treatment were 100.5 ± 29%, 103.5 ± 23.7%, and 79.9 ± 37.3%, respectively. The difference of FEV1 before and after mannitol was significant statistically (P = 0.031). The mean of FEV1, FVC, and FEF 25% - 75% in 5% of the HTS group were 96.2 ± 25.5%, 99 ± 19.8% and 77.8 ± 35.6% before the treatment and 95.2 ± 20.1%, 99.3 ± 19.2%, 74.2 ± 29.5% after the treatment. There was no significant difference in 5% of the HTS group (1). Accordingly, the authors concluded that inhaled soluble mannitol improved lung function in CF patients, and the better effect was with 5% HTS (1). I assume that such results are questionable due to the presence of the following methodological limitation. It is worthy of mentioning that the proper evaluation of PFT is usually accomplished by estimating the absolute values of FEV1, FVC, and FEF 25% - 75%, comparing them with predicted values, and examining the shape of the curves. Precise evaluation of PFT in particular patients in comparison with matched controls of the same age, gender, height, and ethnicity needs population-specific spirometric reference values (RV) (2). Actually, there are many pediatric populations-specific spirometric RV employed in the clinical settings and researches (3, 4). To the best of my knowledge, spirometric RV for the pediatric population in Iran has already been constructed (5). sSurprisingly, the authors did not mention which spirometric RV they employed in the study methodology. I assume that the employment of national spirometric RV could yield more accurate results.

Footnotes

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