Better Together

The Benefits of Integrating OPEP and Nebulizer Therapy in Respiratory Care

By: Alexandrea Ledoux
RRT, ICU Medical Employee

Make treatment faster, more effective, and easier to follow

For clinicians managing patients with chronic respiratory conditions, balancing effectiveness with efficiency is key. Treating chronic lung diseases like COPD, bronchiectasis, and cystic fibrosis often means relying on nebulizer therapy to deliver crucial medications directly to the lungs, helping to keep airways hydrated and clear. But standalone nebulizer use can be time-consuming, making it challenging for patients to stay consistent with their treatments.

By combining nebulizer therapy with an Oscillatory Positive Expiratory Pressure (OPEP) device, like the Acapella™, clinicians can offer patients a streamlined approach that not only enhances medication delivery but also optimizes mucus clearance. This powerful combination can lead to better outcomes and potentially greater patient adherence, providing a compelling solution to a common challenge in respiratory care.

Here's how each therapy contributes to better respiratory care—and why using them together can be particularly impactful.

Complementary Mechanisms for Mucus Clearance

Effective mucus clearance is essential for maintaining lung health and preventing complications in patients with chronic lung disease. OPEP and nebulizer therapy each play unique roles in supporting this process:

- OPEP Therapy: The oscillatory pressure generated by devices like the Acapella creates vibrations in the airways, loosening mucus and enhancing clearance through forced expiratory techniques such as huff coughing.[1,2]
- Nebulizer Therapy: Nebulizers aerosolize medications for easy lung absorption. Medications such as bronchodilators and saline thin mucus, improving viscosity and facilitating clearance.[3,4,5]

When used together, OPEP therapy loosens mucus, while nebulized medications help thin it. This combination makes clearance more effective and reduces the burden of airway obstruction.[5]

Improved Aerosol Medication Distribution

The lung expansion achieved with OPEP therapy can support more even distribution of aerosolized medications across the airways. This combination helps ensure that medication reaches target areas in the lungs, maximizing therapeutic efficacy.[6]

Non-Pharmaceutical and Pharmaceutical Synergy

Combining OPEP and nebulizers creates a synergistic effect, pairing mechanical airway clearance with pharmacologic intervention. OPEP devices facilitate non-drug-based mucus clearance, while nebulized medications thin mucus and further enhance the clearing process.[1,3,7,8]

For patients with conditions like cystic fibrosis and chronic bronchitis, this approach has the potential to improve overall lung function and patient quality of life.[9,10]

Streamlining Treatment Time for Better Adherence

Clinicians understand the challenge of ensuring patient adherence to complex treatment regimens. Simultaneous OPEP and nebulizer therapy can reduce overall treatment time, making it easier for patients to adhere to prescribed therapies. Integrating these treatments in a single session minimizes the daily burden, potentially improving compliance.[1,11]

Enhanced Symptom Control

Combining OPEP and nebulizer therapy can improve control over symptoms such as breathlessness, coughing, and wheezing. This dual approach can lead to more effective management of chronic respiratory conditions, resulting in fewer exacerbations and improved day-to-day function.[12,13,14,15]

Helps Prevent Infections and Chronic Inflammation

The cycle of mucus retention, infection, and inflammation can significantly impact patient outcomes. Effective mucus clearance reduces this cycle's impact by preventing mucus stasis, which is associated with infection risk. By reducing retained secretions, OPEP and nebulizer therapy together help maintain airway hygiene and reduce the risk of infections and inflammation.[16,17]

Optimize Respiratory Care Through Combined Therapy

For clinicians seeking effective interventions for chronic respiratory disease management, combining nebulizer therapy with an OPEP device is a compelling option. This approach not only enhances medication delivery and mucus clearance but also streamlines treatment, supporting patient adherence. For patients with conditions such as COPD, bronchiectasis, and cystic fibrosis, where mucus management is essential, this dual therapy approach can improve disease control and quality of life.[18,19]

By considering this combined therapy, you can offer patients a more manageable path to respiratory health—one that respects their time, improves their comfort, and ultimately, helps them breathe a little easier.

References

1. Coppolo DP, Schloss J, Suggett JA, Mitchell JP. Non-Pharmaceutical Techniques for Obstructive Airway Clearance Focusing on the Role of Oscillating Positive Expiratory Pressure (OPEP): A Narrative Review. Pulm Ther. 2022 Mar;8(1):1-41. doi: 10.1007/s41030-021-00178-1. Epub 2021 Dec 3. PMID: 34860355; PMCID: PMC8640712.
2. Bronchiectasis. (2023, September 1). Oscillating positive expiratory pressure therapy - bronchiectasis. https://bronchiectasis.com.au/physiotherapy/techniques/oscillating-positive-expiratory-pressure-therapy#:~:text=It%20involves%20breathing%20with%20a,improving%20ventilation%20of%20the%20lungs.
3. Belli S, Prince I, Savio G, Paracchini E, Cattaneo D, Bianchi M, Masocco F, Bellanti MT, Balbi B. Airway Clearance Techniques: The Right Choice for the Right Patient. Front Med (Lausanne). 2021 Feb 4;8:544826. doi: 10.3389/fmed.2021.544826. PMID: 33634144; PMCID: PMC7902008.
4. Nebuliser - an overview | ScienceDirect Topics.
5. Mucus Thinners | Cystic Fibrosis Foundation (cff.org).
6. How to improve effects of aerosol medication without increasing the amount - Respiratory Care WA (asthmawa.org.au).
7. Oscillating Positive Expiratory Pressure (OPEP) - Physis Physiotherapy.
8. A Functional Respiratory Imaging Approach to the Effect of an Oscillating Positive Expiratory Pressure Device in Chronic Obstructive Pulmonary Disease - PMC (nih.gov).
9. Efficacy of an oscillating positive expiratory pressure device in patients with Mycobacterium avium complex pulmonary disease - ScienceDirect.
10. Patients' practices and experiences of using nebuliser therapy in the management of COPD at home - PMC (nih.gov).
11. Combining Inhalation by A Breath Actuated Nebuliser (BAN) With Exhalation Through An Oscillating Positive Expiratory Pressure Device (OPEP) Offers The Potential For Optimal Combined Therapy | European Respiratory Society (ersjournals.com).
12. Nebuliser for Cough: How to Use, for Children, and Precautions (healthline.com).
13. COPD Devices: Nebulisers and Inhalers (MDI and DPI) (webmd.com).
14. Prevention of COPD Exacerbations | Journal of the COPD Foundation.
15. Bronchiectasis - Treatment - NHS (www.nhs.uk).
16. Postural Drainage and Vibration - StatPearls - NCBI Bookshelf (nih.gov).
17. Nebulisers | Asthma + Lung UK (asthmaandlung.org.uk).
18. Coping with Airway Mucus | Bronchiectasis and NTM Initiative.
19. Chronic Bronchitis | Johns Hopkins Medicine.

icumedical
human connections