



Obstructive Lung Diseases

TOPIC: Obstructive Lung Diseases

TYPE: Original Investigations

EVALUATION OF TRENDS IN PATIENT REPORTED OUTCOMES FOLLOWING INITIATION OF OSCILLATION AND LUNG EXPANSION THERAPY WITH THE VOLARA SYSTEM

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PURPOSE: The Volara™ System is a novel device that is intended for the mobilization of secretions, lung expansion therapy, and the treatment and prevention of pulmonary atelectasis. Oscillation and lung expansion (OLE) therapy can be used in the acute care as well as the home setting, in patients with cystic fibrosis [CF], chronic obstructive pulmonary disease [COPD], Bronchiectasis, neuromuscular disease [NMD], and other conditions requiring airway clearance therapy. In this study, we aimed to evaluate the trends in clinical outcomes in patients started on OLE, as documented in the OLE patient reported outcomes data repository.

METHODS: Data from the OLE patient reported outcomes data repository was used to evaluate trends in healthcare resource utilization for respiratory complications pre and post initiation of therapy. The population of interest was patients with any diagnosis receiving OLE between April 2020 and March 2021. Patients with complete data were included in the study. Descriptive statistics were analyzed for the demographic, clinical characteristics, and clinical outcomes.

RESULTS: Of the 719 patients in the data repository, 121 subjects met 3-month criteria, and 38 subjects met 6-month criteria. The predominantly female (55%) cohort had a mean age of 48 years, with 47% aged ≥ 60 and 23% < 18 y. Of these, 32% had bronchiectasis, 25% had NMD or cerebral palsy, 23% had CF and 10% had COPD. Prior use of other airway clearance modalities was present in 94% of participants. In the 0-month to 3-month time interval, the mean number of antibiotic prescriptions for respiratory infections was 13/month compared to 27/month at baseline. Hospitalization rates were reported at a mean of 4.3/month compared to 13.5/month at baseline. All hospitalized patients reported one hospitalization. Emergency room visits were low at 3.5%. In the 3- to 6-month time interval, the mean number of antibiotic prescriptions for respiratory infections was 4.3/month compared to 8.3/month at baseline. Hospitalization rates were reported at a mean of 3.7/month compared to 5.8/month at baseline. Of those hospitalized in the treatment period, 77% reported one hospitalization. Emergency room visits remained low at 5.3%. A mean of 75% of respondents had high levels of satisfaction with therapy over the study period. Seventy three percent of respondent were adherent to therapy. There was also a reduction in patients with subjective difficulty in breathing (15% vs 1%) over the 6 months of OLE therapy.

CONCLUSIONS: Patients receiving at home OLE therapy showed improved self-reported clinical outcomes in various disease states, as evidenced by the reduction in hospitalizations and antibiotic use, and subjective improvement in ease of breathing in the first 6 months of therapy. This was accompanied by high levels of patient satisfaction and adherence to therapy. Longer term studies with established correlation with EMR data as well as clinical studies are needed to support these findings.

CLINICAL IMPLICATIONS: Oscillation and lung expansion therapy use in the home may be associated with improvement in clinical outcomes in patients with chronic respiratory disease requiring long term airway clearance therapy.

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Employee relationship with Hill-Rom Inc Please note: 3 years Added 04/30/2021 by Mwanamisi Wanjala, source=Web Response, value=Salary

DOI: <https://doi.org/10.1016/j.chest.2021.07.1670>

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