Clinical Notes

CLRT and Percussion/Vibration for Pulmonary Support

Erica Thibault, MS, RN, APN, CNS, CWON

The typical patient needing pulmonary support is vented, sedated, and unable to cough or deep breathe on their own. This may lead to additional complications, including higher risk for ARDS or pneumonia. Today's ICU bed frames and/or support surfaces can be valuable tools to encourage pulmonary hygiene.[1]

Mobilizing secretions

The key to avoiding pulmonary complications is to mobilize secretions—in other words, to move mucous that may otherwise remain stagnant in the lungs and airways. Clinicians use three therapies to get things moving:

- **Continuous Lateral Rotation Therapy (CLRT):** using a specialized bed frame or support surface, the patient is turned side to side 40 degrees or more; gravity and movement mobilize secretions from the base of the lungs to the point where they can be suctioned out.[2]
- **Percussion:** repeated pounding on the chest breaks up sections. This can be done through manual (with cupped hands) or mechanical means (device integrated within the support surface).
- **Vibration:** often used in conjunction with percussion; helps move secretions to the point where they can be suctioned out. Can be done using a mechanical device integrated within the support surface or used by a respiratory therapist.

Which therapy and for how long?

The attending physician will typically prescribe therapy type, intensity, and duration. With rotational therapy (CLRT), literature supports 60-90 minutes per side, rotating back and forth for a designated amount of time. Nurses often track the number of hours within the past 24 hours that a patient was in rotation—the more the better.

Percussion and vibration may be prescribed individually, but are more often prescribed together—and in conjunction with CLRT. Ideally, a patient will be on percussion/vibration for 30-45 minutes at a time and perhaps up to 20 hours per day for the greatest effectiveness. Chest X-rays and other lung indicators are used to track the patient's progress.

Other CLRT considerations

Clinicians sometimes ask about the advantages of full-body vs. torso-only. Research shows full-body CLRT provides the patient greater benefit by getting the legs activated and avoiding mobility complications such as DVT.[3]

Another consideration: CLRT does not support pressure injury (PI) treatment or prevention. The NPUAP/NPIAP says the small positioning shifts during CLRT do not replace proper repositioning or pressure redistribution.[4] ICU patients are already at elevated risk for PI, but sometimes that risk is outweighed by the lifesaving benefits of CLRT.

References:

1. Raoof S, Chowdhrey N, Raoof S, Feuerman M, King A, Sriraman R, Khan FA. (1999). Effect of combined kinetic therapy and percussion therapy on the resolution of atelectasis in critically ill patients. Chest. 1999;115:1658-1666.
2. Kirschenbaum L, Azzi E, Sfeir T, Tietjen P, Astiz M. (2002). Effect of continuous lateral rotational therapy on the prevalence of ventilator-associated pneumonia in patients requiring long-term ventilatory care. Crit Care Med. 2002;30:1983-1986.
3. Deep Vein Thrombosis. (2019). MedlinePlus, National Library of Medicine. Accessed online: medlineplus.gov/deepveinthrombosis.html
4. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. (2019). European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, and Pan Pacific Pressure Injury Alliance. The International Guideline. 2019; 134-135.

Need more info? The Sizewise Clinical Support Team is available to answer your questions or provide additional training. Call 800-814-9389 or email clinicalsupport@sizewise.com.

Sizewise®

CLI-0044J-0320