

Manual and Ventilator Hyperinflation Parameters Used by Intensive Care Physiotherapists in Sri Lanka: An Online Survey

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Hyperinflation is a common procedure to clear secretion, enhance oxygenation, and increase lung compliance in mechanically ventilated patients. Hyperinflation can be provided as manual hyperinflation (MHI) or ventilator hyperinflation (VHI), where outcomes depend upon the methods of application. It is crucial to assess the application of techniques in Sri Lanka due to observed variations from recommended practices. This study aimed to evaluate the application and parameters used for MHI and VHI by physiotherapists in intensive care units (ICUs) in Sri Lanka. An online survey was conducted among physiotherapists who are working in ICUs in Sri Lanka using WhatsApp groups and other social media platforms. A total of 96 physiotherapists responded. The survey comprised three sections to obtain information about socio-demographic data, MHI practices and VHI practices. Most (47%) respondents worked in general hospitals. 74% of participants had a bachelor's degree in physiotherapy and 31.3% had 3-6 years of experience, 93.8% used hyperinflation, and 78.9% used MHI. MHI was performed routinely and as needed to treat low oxygen levels, abnormal breath sounds, and per physician orders while avoiding contraindications. Self-inflation bags are frequently used for MHI (40.6%). Only a few participants (26%) used a manometer or tracked peak inspiratory pressure (PIP). In addition to the supine position, (37.5%) participants used the side-lying position as well. Most physiotherapists followed the recommended MHI technique: slow squeeze (57.3%), inspiratory pause (45.8%), and quick release (70.8%). VHI was practised by 19.8%, with medical approval and it was frequently performed by medical staff compared to physiotherapists. Treatment time, number of breaths, and patient positioning varied, and parameters were not well-defined. The study found that MHI was not applied with the recommended PIP, and VHI parameters were not identified. The study indicates a need to educate ICU physiotherapists about current VHI and MHI practice guidelines.

Keywords: Intensive care, Manual hyperinflation, Physiotherapists, Ventilator hyperinflation, Hyperinflation

Acknowledgement: Sincere gratitude is offered to all the participants and all physiotherapists who helped in data collection and Dr (Mrs.) Kate Hayes for granting permission to use the questionnaire developed to assess VHI techniques.