

Effect of Volumetric Incentive Spirometry on Pulmonary, Cardiovascular and Psychological Indices during Third Trimester of Pregnancy: A Pilot Study

Dr. Sweta Agrawal (PT)*, Dr. Bharat Tiwari (PT)

IKDRC ITS College of Physiotherapy, Civil Hospital Campus, Asarwa, Ahmedabad- 16

*Corresponding author

ABSTRACT

Introduction: During pregnancy there is progressive anatomical, physiological and biochemical changes not only confined to the genital organs but also to all systems of the body affecting maternal quality of life. Incentive Spirometry works by encouraging the patient to achieve a pre-set volume thereby reduce work of breathing and improves diaphragmatic activity resulting in reduced dyspnea, anxiety, fatigue and improvement in functional capacity and pulmonary functions. The abdominal muscles could be strengthened in order to assist the ventilator process and can aid prolonged and forced expiration.

Methodology: Study was conducted on 16 subjects fulfilling inclusion and exclusion criteria followed by random assignment into group A and B. Group A as control group and Group B received Volumetric Spirometry for 4 weeks. Baseline assessment on day 1 in which anxiety assessment using Hamilton anxiety rating scale [HARS], fatigue assessment using Multidimensional assessment of fatigue scale [MAFS], dyspnea assessment using Barthel index- Dyspnea [BID], pulmonary functions using PFT [FEV1, FVC, PEFR, MVV] and functional capacity assessment using 6MWT was done. All measures were reassessed at the end of 4 weeks.

Result: Result shows significant improvement in intervention group with (MEAN±SD) in HARS (27.12±2.94) (P 0.02), MAFS (40.5±17.11) (p 0.007), BID (10.37±2.06) (p <0.01), 6MWT (436.12±34.53) (p 0.02), FEV1 (2.32±0.47) (p <0.01), FVC (2.43±0.36) (p 0.003), PEFR (190.25±14.13) (p 0.039), MVV (89.25±5.94) (p < 0.01) when compared with control group using independent t test.

Conclusion: Volumetric spirometry is effective in improving pulmonary, cardiovascular and psychological indices during third trimester of pregnancy thereby improving quality of life and should be incorporated in convention rehabilitation protocol.

Keywords: Incentive spirometer, Pulmonary indices, Cardiovascular indices, Pregnancy

