Title: Comparison of active cycle breathing technique (ACBT)/forced expiration technique (FET) vs. flutter device in facilitating sputum expectoration among stable COPD patients at UST hospital

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Body: BACKGROUND Airway clearance techniques are available to avoid the vicious cycle of colonization and infection of bronchi among COPD patients. The efficacy of these techniques needs to be looked into.

OBJECTIVE To determine if a flutter device is as effective as the ACBT in facilitating sputum expectoration among stable COPD patients.

METHODS A randomized controlled open labelled trial was done from July to October 2011 at the USTH OPD. A total of twenty two patients (22) were randomized and trained to the lung flute group (n=12) and active cycle breathing technique/force expiration technique (ACBT/FET) group (n=10). Sputum volume and level of difficulty of sputum expectoration was recorded.

RESULTS The mean sputum volume for 3 days was relatively higher among patients on ACBT/FET (6.58 ± 2.94 ml) compared to the Lung Flute group (5.90 ± 2.99 ml) however there was no statistical difference (p=0.525). Sixty seven percent (8/12) of the subjects expectorated mucopurulent sputum in the lung flute group compared to 50% (5/10) in the ACBT/FET group. The mean visual analog score of the Lung Flute group was 6.83 ± 1.11 with a relief of difficulty to VAS 2.8 ± 0.63 post-treatment compared to the ACBT group with pre-treatment and post-treatment score of 6.6 ± 0.97 and 3.0 ± 0.74, respectively. There was significant relief in difficulty of sputum expectoration for both groups with a p-value of <0.0001.

CONCLUSION The use of a flutter devices is as effective as the Active Cycle Breathing Technique (ACBT)/Forced Expiration Technique (FET) in facilitating sputum expectoration among stable COPD patients.