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The effects of ELTGOL on muciliary clearance in patients with COPD

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Excessive bronchial secretion is a common complication of chronic obstruction pulmonary disease (COPD) and its presence is associated with greater hospitalization and death. Slow expiration with the glottis open in a lateral posture (ELTGOL) is a chest physiotherapy procedure for the removal of secretions. The aim this study was to evaluate the effects of ELTGOL on the muciliary clearance in patients with COPD. Ten patients with COPD aged 45 to 75 years were studied. After inhaling 20 mCi of ^{99m}Tc -DTPA, six scintigraphy images were taken in intervals of 0, 20, 40, 60, 80 and 120 minutes. The study was carried out in two stages (control and experimental) in a randomized order with an interval of one week between the stages. In the experimental stage, ELTGOL was carried out after the first image. The right lung was studied, comparing the percentage of retention (R%) of radioactive aerosol obtained during the control stage with the experimental, for each interval studied. The study was approved by the local ethics committee. The Wilcoxon test was used for data analysis with a significance level of $\alpha < 0.05$. Results: As shown in Table 1.

Table 1: Descriptive statistics

TIME (min)	CONTROL (R %)	EXPERIMENTAL(R %)	p
0	100 ± 0	100 ± 0	1.00
20	77 ± 6.8	62 ± 8.9	0.005*
40	63 ± 8.6	46 ± 8.6	0.007*
60	51 ± 8.8	39 ± 7.9	0.005*
80	45 ± 7.8	35 ± 7.3	0.007*
120	37 ± 6.9	25 ± 4.1	0.005*

* Significant differences at $p < 0.05$ The present results showed the ELTGOL significantly increased the muciliary clearance suggesting that ELTGOL is an effective technique to improve secretion removal in patients with COPD.