

INTISARI

PENGARUH *PURSED-LIPS BREATHING* TERHADAP KADAR EOSINOFIL SPUTUM PADA PENDERITA PENYAKIT PARU OBSTRUKTIF KRONIK

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Latar Belakang. Kematian karena PPOK diperkirakan akan meningkat >30% dalam 10 tahun ke depan. Pada PPOK, eosinofil juga memegang peranan penting dalam proses inflamasi, sehingga perberatan inflamasi dan severitas PPOK berbanding lurus dengan peningkatan jumlah eosinofil pada jaringan paru. *Purse-lip breathing* dapat memperbaiki pola nafas, meningkatkan volume tidal dan mengurangi sesak nafas serta mengurangi reaksi inflamasi pada jaringan paru. Penurunan reaksi inflamasi ini dapat menurunkan jumlah eosinofil pada jaringan paru.

Tujuan Penelitian. Menganalisis pengaruh rehabilitasi *pursed-lips breathing* terhadap eosinofil sputum.

Metode. Penelitian eksperimental, *Randomized Controlled Trial* (RCT), *open label* yang dilakukan pada pasien PPOK stabil GOLD 2 dan GOLD 3. Penelitian dilakukan di Rumah Sakit Khusus Paru (RSKP) Respira Bantul, Yogyakarta. Subjek yang memenuhi kriteria inklusi diambil secara acak sebagai PLB atau kontrol. Kelompok perlakuan (PLB) terdiri dari 10 sampel, meneruskan terapi standar sebelumnya dan melakukan PLB 8 menit selama 28 hari (4 minggu) berturut-turut. Kelompok kontrol terdiri dari 12 sampel hanya meneruskan terapi standar sebelumnya. Pengukuran eosinofil sputum dilakukan pada kedua kelompok sebelum dan sesudah perlakuan dan dibandingkan antara kelompok PLB dan kontrol. Beda rerata eosinofil sputum antara kelompok yang mendapat PLB dan kontrol diuji dengan *T-test* tidak berpasangan / *Mann Whitney U test*.

Hasil Penelitian. Didapatkan hasil pengukuran antara sebelum dan sesudah perlakuan pada masing-masing kelompok, pada kelompok kontrol didapatkan perbedaan yang bermakna eosinofil sputum ($p=0,023$), dan pada kelompok perlakuan terdapat pula perbedaan bermakna eosinofil sputum ($p=0,042$). Penilaian terhadap perubahan eosinofil sputum menunjukkan adanya perubahan rerata yang lebih besar pada kelompok perlakuan dibandingkan kontrol. Perbedaan eosinofil sputum yang didapatkan ini tidak bermakna secara statistik, $p=0,391$

Kesimpulan. Terdapat perbaikan inflamasi berupa penurunan eosinofil sputum pada penderita PPOK yang mendapatkan terapi standar dan rehabilitasi paru dengan teknik *pursed-lips breathing* (PLB)

Kata Kunci. PPOK (Penyakit Paru Obstruktif Kronik), PLB (*Pursed-Lips Breathing*), eosinofil sputum.

ABSTRACT

EFFECT OF PURSED-LIPS BREATHING ON THE NUMBER OF EOSINOPHIL SPUTUM IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS

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Background. Death due to COPD is expected to increase > 30% in the next 10 years. In COPD, eosinophils also play an important role in the inflammatory process, so the inflammation and severity of COPD is directly proportional to the increase in the number of eosinophils in lung tissue. Purse-lip breathing can improve breathing patterns, increase tidal volume and reduce shortness of breath and reduce inflammatory reactions in lung tissue. Decreasing this inflammatory reaction can reduce the number of eosinophils in lung tissue.

Objective. Analyzing the effect of pursed-lips breathing on eosinophil sputum.

Method. An experimental, randomized controlled trial (RCT), open label study was conducted on stable COPD patients GOLD 2 and GOLD 3. The study was conducted at the Lung Special Hospital (RSKP) Respira Bantul, Yogyakarta. Subjects who met the inclusion criteria were taken randomly as PLB or controls. The treatment group (PLB) consisted of 10 samples, continued the previous standard therapy and performed PLB 8 minutes for 28 days (4 weeks) in a row. The controls group consisted of 12 samples only continuing the previous standard therapy. Measurement of eosinophil sputum was carried out in both groups before and after treatment and compared between PLB and control groups. The mean difference of eosinophil sputum between groups that received PLB and controls was tested by the Mann Whitney U test.

Result. The results of measurements between before and after treatment in each group were obtained, in the control group significant differences in eosinophil sputum ($p = 0.023$), and in the treatment group there were also significant differences in eosinophil sputum ($p = 0.042$). Assessment of changes in eosinophil sputum showed a greater mean change in the treatment group than in the control group. The difference in eosinophil sputum obtained was not statistically significant, $p = 0.391$.

Conclusion. There is an improvement in inflammation in the form of a decrease in eosinophils of sputum in patients with COPD who get standard therapy and pulmonary rehabilitation with pursed-lips breathing (PLB) technique.

Keyword. COPD (*Chronic Obstructive Pulmonary Disease*), PLB (*Pursed-Lips Breathing*), eosinophil sputum.