

ABSTRAK

EFEK PENAMBAHAN *HOME-BASED INCENTIVE SPIROMETRY* TERHADAP NILAI ARUS PUNCAK EKSPIRASI PADA PASIEN ASMA YANG MENDAPAT SENAM ASMA

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Latar Belakang

Pada asma terjadi keterbatasan aliran udara terutama saat ekspirasi ditandai dengan nilai arus puncak ekspirasi (APE) yang menurun. Senam asma merupakan suatu gerakan aerobik berirama yang dapat meningkatkan nilai APE dengan meningkatkan peningkatan cardiac output sehingga perfusi dan ventilasi di paru juga meningkat. Latihan incentive spirometry (IS) juga dapat meningkatkan nilai APE dengan mekanisme yang berfokus pada inspirasi maksimal berkelanjutan kemudian ekspirasi perlahan sehingga membantu meningkatkan volume paru dan pembersihan saluran napas. Senam asma dan IS memiliki mekanisme kerja yang berbeda sehingga diharapkan kombinasi keduanya dapat memberikan efek sinergis dalam meningkatkan nilai APE.

Metode

Penelitian ini *randomized control trial* pada 26 pasien asma. Pasien dibagi menjadi 2 kelompok, yaitu kelompok kontrol (n=13) mendapatkan senam asma dan kelompok perlakuan (n=13) mendapatkan penambahan latihan *home-based incentive spirometry*. Nilai arus puncak ekspirasi diukur sebelum dan sesudah 4 minggu perlakuan.

Hasil

Terdapat perbedaan yang bermakna secara statistik rerata nilai APE pra dan paska intervensi pada kelompok perlakuan ($423,85 \pm 91,88$; $p < 0,001$) dan kelompok kontrol ($390,77 \pm 99,62$; $p < 0,001$). Peningkatan perubahan rerata selisih/delta APE antar kelompok lebih tinggi pada kelompok perlakuan dibandingkan kelompok kontrol ($102,31 \pm 25,87$ vs $57,69 \pm 32,19$; $p = 0,001$).

Kesimpulan

Penambahan latihan *home-based incentive spirometry* dan senam asma dapat meningkatkan nilai APE lebih tinggi pada pasien asma dibandingkan dengan senam asma saja.

Kata Kunci : *asma, arus puncak ekspirasi, incentive spirometry, senam asma*

ABSTRACT

EFFECTS OF ADDING A HOME-BASED INCENTIVE SPIROMETRY TO SENAM ASMA ON PEAK EXPIRATORY FLOW RATE OF ASTHMA PATIENTS

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Background

Asthma is characterized by variable expiratory airflow limitation. It is marked by decreased peak expiratory flow rate (PEFR). Senam asma is a rhythmic aerobic movement that increase PEFR by improving the cardiac output so the lung perfusion and ventilation will be increased. Incentive spirometry (IS) exercise can also increase PEFR through a mechanism that focuses on sustained maximum inspiration and slow expiration that can improve lung volume and airway clearance. Therefore, the combination of the exercises are expected to give synergistic effect through their different mechanism in improving PEFR.

Methods

This study was a randomized controlled trial. Twenty-six asthma patients were divided into 2 groups. The control group (n=13) was received senam asma and the intervention group (n=13) was received additional home-based incentive spirometry exercise. Peak expiratory flow rate were measured before and after 4 weeks of treatment.

Results

There was a statistically significant difference in the mean pre- and post-intervention PEFR in the intervention (423.85 ± 91.88 ; $p < 0.001$) and the control group (390.77 ± 99.62 ; $p < 0.001$). The increase of the mean difference/delta PEFR between groups was higher in the intervention group than in the control group (102.31 ± 25.87 vs 57.69 ± 32.19 ; $p = 0.001$).

Conclusion

The improvement of PEFR was better in group who received senam asma and home-based incentive spirometry exercise compared to group who received senam asma alone.

Key Words: asthma, senam asma, incentive spirometry, peak expiratory flow rate