

ABSTRAK

Perbedaan Kadar *Interleukin-6* Dan *Interleukin-10* Sebelum Dan Sesudah Intervensi *Slow Deep Breathing Exercise* Terhadap Pada Penderita Hipertensi Di Posyandu Lansia Waras Winangun Purwokerto Timur

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Latar Belakang: Hipertensi merupakan faktor risiko utama penyakit kardiovaskular yang sering dikaitkan dengan proses inflamasi kronis. Sitokin proinflamasi seperti *Interleukin-6* (IL-6) berperan dalam patogenesis hipertensi, sedangkan sitokin antiinflamasi seperti *Interleukin-10* (IL-10) dapat menghambat efek inflamasi. *Slow deep breathing exercise* (SDBE) telah dikaitkan dengan peningkatan regulasi sistem saraf otonom dan potensi efek antiinflamasi. **Metode:** Penelitian ini menggunakan desain *pra-eksperimental* dengan pendekatan *one-group pretest-posttest*. Sampel sebanyak 35 orang pra-lansia dan lansia dengan hipertensi. Subjek menjalani intervensi SDBE selama 6 minggu, tiga kali per minggu, dengan durasi 10-15 menit per sesi. Pengukuran kadar IL-6, IL-10, dan tekanan darah dilakukan sebelum dan sesudah intervensi menggunakan metode ELISA dan *sphygmomanometer*. Analisis data menggunakan uji *Wilcoxon Signed Rank Test*. **Hasil:** Hasil menunjukkan peningkatan kadar IL-10 yang signifikan setelah intervensi ($p = 0,000$), namun tidak terdapat perubahan signifikan pada kadar IL-6 ($p = 0,108$). Tekanan darah sistolik dan diastolik mengalami penurunan signifikan, masing-masing dari $158,54 \pm 14,06$ mmHg menjadi $149,69 \pm 14,10$ mmHg ($p = 0,003$) dan dari $88,80 \pm 15,30$ mmHg menjadi $84,66 \pm 9,12$ mmHg ($p = 0,152$). **Kesimpulan:** *Slow deep breathing exercise* dapat meningkatkan kadar IL-10 sebagai sitokin antiinflamasi dan menurunkan tekanan darah pada pra-lansia dan lansia dengan hipertensi. Namun, tidak ditemukan perubahan signifikan pada kadar IL-6. Intervensi ini dapat menjadi terapi non-farmakologis yang mendukung pengelolaan hipertensi.

Kata Kunci: *Slow Deep Breathing Exercise*, Hipertensi, IL-6, IL-10, Inflamasi

ABSTRACT

Difference In Interleukin-6 And Interleukin-10 Levels Before And After Slow Deep Breathing Exercise Intervention In Hypertensive Patients At Posyandu Lansia Waras Winangun, East Purwokerto

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Background: Hypertension is a major risk factor for cardiovascular disease and is often associated with chronic inflammatory processes. Pro-inflammatory cytokines such as Interleukin-6 (IL-6) play a role in the pathogenesis of hypertension, while anti-inflammatory cytokines such as Interleukin-10 (IL-10) can counteract inflammatory effects. Slow deep breathing exercise (SDBE) has been linked to improved regulation of the autonomic nervous system and potential anti-inflammatory effects. **Methods:** This study employed a pre-experimental design with a one-group pretest-posttest approach. The sample consisted of 35 pre-elderly and elderly individuals with hypertension. Participants underwent SDBE intervention for 6 weeks, three times per week, with each session lasting 10–15 minutes. IL-6, IL-10, and blood pressure were measured before and after the intervention using ELISA and a sphygmomanometer. Data were analyzed using the Wilcoxon Signed Rank Test. **Results:** The findings showed a significant increase in IL-10 levels after the intervention ($p = 0.000$), while no significant change was observed in IL-6 levels ($p = 0.108$). Systolic and diastolic blood pressure decreased significantly, from 158.54 ± 14.06 mmHg to 149.69 ± 14.10 mmHg ($p = 0.003$) and from 88.80 ± 15.30 mmHg to 84.66 ± 9.12 mmHg ($p = 0.152$), respectively. **Conclusion:** Slow deep breathing exercise can increase IL-10 levels as an anti-inflammatory cytokine and reduce blood pressure in pre-elderly and elderly individuals with hypertension. However, no significant change was found in IL-6 levels. This intervention can serve as a non-pharmacological therapy to support hypertension management.

Keywords: Slow Deep Breathing Exercise, Hypertension, IL-6, IL-10, Inflammation.