

**PERBANDINGAN DEXMEDETOMIDINE DAN MIDAZOLAM
TERHADAP KADAR INTERLEUKIN-6 PASIEN PERAWATAN UNIT
INTENSIF PASCA *CORONARY ARTERY BYPASS GRAFT***

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ABSTRAK

Latar Belakang: Interleukin-6 (IL-6) meningkat pasca trauma akut dan berperan dalam respon inflamasi sistemik setelah *coronary artery bypass graft* (CABG). Dexmedetomidine dan midazolam merupakan agen anestesi yang umum digunakan dalam perawatan intensif dan mempengaruhi ekspresi IL-6.

Tujuan Penelitian: Menganalisis perbedaan dexmedetomidine dan midazolam terhadap kadar interleukin-6 pasca operasi *coronary artery bypass graft* di perawatan unit intensif.

Metode Penelitian: *Randomized pre-test post-test design* pada 18 pasien yang menjalani operasi *coronary artery bypass graft* di perawatan unit intensif dan memenuhi kriteria inklusi dan eksklusi. Sampel dibagi menjadi 2 kelompok yang mendapatkan midazolam dan dexmedetomidine pasca operasi. Sampel darah diambil sebelum dan 12 jam pasca operasi untuk diukur kadar interleukin-6 menggunakan metode *Enzyme Linked Immunosorbent Assay* (ELISA). Seluruh sampel dianalisis untuk mendapatkan rata-rata dan standar deviasi dan dilakukan uji T berpasangan dengan nilai signifikan jika nilai $p < 0.05$.

Hasil Penelitian: Rerata kadar interleukin-6 kelompok midazolam sebelum operasi adalah $277,88 \pm 125,27$ pg/ml meningkat secara bermakna setelah operasi sebesar $386,97 \pm 577,65$ pg/ml dengan $p = 0,001$. Rerata kadar interleukin-6 kelompok dexmedetomidine sebelum operasi adalah $197,21 \pm 65,11$ pg/ml secara bermakna berkurang setelah operasi sebesar $149,73 \pm 65,99$ pg/ml dengan $p = 0,021$. Tidak ditemukan perbedaan bermakna kadar IL-6 pasca operasi antara dexmedetomidine dan midazolam ($p = 0,824$).

Kesimpulan: Midazolam secara bermakna meningkatkan kadar interleukin-6 pasca *coronary artery bypass graft*. Dexmedetomidine menurunkan secara bermakna kadar interleukin-6 pasca operasi *coronary artery bypass graft*. Tidak ditemukan perbedaan bermakna perubahan kadar interleukin-6 antara dexmedetomidine dan midazolam pasca *coronary artery bypass graft* di perawatan unit intensif.

Kata Kunci: Dexmedetomidine, Midazolam, Interleukin-6, *coronary artery bypass graft*

**THE COMPARISON OF DEXMEDETOMIDINE AND MIDAZOLAM ON
INTERLEUKIN-6 LEVELS AFTER CORONARY ARTERY BYPASS GRAFT
IN INTENSIVE CARE UNIT**

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ABSTRACT

Background: Interleukin-6 (IL-6) increases after acute trauma and plays a role in the systemic inflammatory response after coronary artery bypass graft (CABG). Dexmedetomidine and midazolam are anesthetic agents commonly used in intensive care and affect the expression of IL-6.

Objective: To analyze the differences between dexmedetomidine and midazolam on interleukin-6 levels after coronary artery bypass graft surgery in the intensive care unit.

Methods: Randomized pre-test post-test design in 18 patients who underwent coronary artery bypass graft surgery in the intensive care unit who met the inclusion and exclusion criteria. Samples were divided into 2 groups who received postoperative midazolam and dexmedetomidine. Blood samples were taken before and 12 hours after surgery to measure interleukin-6 levels using the Enzyme Linked Immunosorbent Assay (ELISA) method. All samples were analyzed to obtain the mean and standard deviation and paired T-test was performed with a significant value if the p value <0.05.

Results: The mean level of interleukin-6 in the midazolam group before surgery was 277.88 ± 125.27 pg/ml, a significant increase after surgery was 386.97 ± 577.65 pg/ml with $p=0.001$. The mean level of interleukin-6 in the dexmedetomidine group before surgery was $197,21 \pm 65,11$ pg/ml, which was significantly reduced after surgery by 159.73 ± 65.99 pg/ml with $p=0.021$. There was no significant difference in postoperative IL-6 levels between dexmedetomidine and midazolam ($p=0.824$).

Conclusion: Midazolam significantly increases interleukin-6 levels after coronary artery bypass graft. Dexmedetomidine significantly change the level of interleukin-6 after coronary artery bypass graft surgery. There was no significant difference in changes in interleukin-6 levels between dexmedetomidine and midazolam after coronary artery bypass graft in the intensive care unit.

Keywords: Dexmedetomidine, Midazolam, Interleukin-6, coronary artery bypass graft