

EFEKTIVITAS TEKNIK *E-C CLAMP* DALAM MEMPERTAHANKAN
SATURASI OKSIGEN SELAMA PROSEDUR OKSIGENASI PADA
PASIE GENERAL ANESTESI

Nazar Pujiadi¹, Sugeng Jitowiyono², Titik Endarwati³
^{1,2,3} Jurusan Keperawatan Poltekkes Kemenkes Yogyakarta
Jl. Tata Bumi No. 3 Banyuraden, Gamping, Sleman, Daerah Istimewa
Yogyakarta, 55293

Email: npujiadi@gmail.com

ABSTRAK

Latar Belakang: Fase induksi anestesi umum menyebabkan hilangnya ventilasi spontan dan penurunan tonus otot faring, sehingga pasien rentan mengalami desaturasi oksigen. Keberhasilan oksigenasi bergantung pada kualitas *seal* masker yang dibentuk operator. Teknik *E-C Clamp* adalah teknik pegangan masker yang paling umum digunakan, namun evaluasi efektivitasnya terhadap saturasi oksigen (SpO₂) pada pasien general anestesi masih terbatas.

Tujuan: Mengetahui efektivitas teknik *E-C Clamp* dalam mempertahankan saturasi oksigen (SpO₂) selama prosedur oksigenasi pada pasien yang menjalani general anestesi.

Metode: Penelitian *observasional analitik* dengan *desain one group pretest-posttest without control group*. Sampel berjumlah 148 responden menggunakan teknik *consecutive sampling*. Instrumen yang digunakan adalah *pulse oximetry* dan lembar observasi. Data diuji normalitas menggunakan uji *Kolmogorov-Smirnov* menunjukkan data tidak berdistribusi normal ($p = 0,001$). Data dianalisis menggunakan uji *Wilcoxon Signed Rank Test* ($p < 0,05$).

Hasil: Sebelum oksigenasi, SpO₂ responden bervariasi: 98% sebanyak 53 responden (35,8%), 99% sebanyak 50 responden (33,8%), dan 100% sebanyak 45 responden (30,4%). Setelah oksigenasi menggunakan teknik *E-C Clamp*, seluruh 148 responden (100%) mencapai SpO₂ 100%. Uji *Wilcoxon* menghasilkan nilai $Z = -9,097$ dengan $p\text{-value} = 0,001$ ($p < 0,05$), menunjukkan perbedaan yang signifikan antara SpO₂ sebelum dan sesudah oksigenasi.

Kesimpulan: Teknik *E-C Clamp* efektif dalam meningkatkan dan mempertahankan saturasi oksigen pada pasien general anestesi, ditunjukkan dengan seluruh responden mencapai SpO₂ 100% setelah oksigenasi ($p = 0,001$).

Kata Kunci: *E-C Clamp*, saturasi oksigen, SpO₂, oksigenasi, anestesi umum

THE EFFECTIVENESS OF THE E-C CLAMP TECHNIQUE IN MAINTAINING
OXYGEN SATURATION DURING OXYGENATION PROCEDURES IN
GENERAL ANESTHESIA PATIENTS

Nazar Pujiadi¹, Sugeng Jitowiyono², Titik Endarwati³
^{1,2,3} Jurusan Keperawatan Poltekkes Kemenkes Yogyakarta
Jl. Tata Bumi No. 3 Banyuraden, Gamping, Sleman, Daerah Istimewa
Yogyakarta, 55293
Email: npujiadi@gmail.com

ABSTRACT

Background: General anesthesia induction causes loss of spontaneous ventilation and decreased pharyngeal muscle tone, making patients susceptible to desaturation. Effective oxygenation depends on the operator's ability to create an adequate mask seal. The E-C Clamp is the most widely used mask-holding technique in clinical practice; however, its effectiveness on oxygen saturation (SpO₂) in anesthesia patients has not been well established.

Objective: To determine the effectiveness of the E-C Clamp technique in maintaining oxygen saturation (SpO₂) during oxygenation procedures in patients undergoing general anesthesia.

Methods: An observational analytic study with a one group pretest-posttest without control group design, conducted at RSUP Dr. Sitanala Tangerang, March to April 2026. A total of 148 respondents were recruited via consecutive sampling using a pulse oximeter and observation sheet. Normality testing using the Kolmogorov-Smirnov test showed data were not normally distributed ($p = 0.001$), so data were analyzed using the Wilcoxon Signed Rank Test ($p < 0.05$).

Results: Prior to oxygenation, SpO₂ varied: 53 respondents (35.8%) had SpO₂ 98%, 50 (33.8%) had SpO₂ 99%, and 45 (30.4%) had SpO₂ 100%. After oxygenation using the E-C Clamp technique, all 148 respondents (100%) achieved SpO₂ 100%. The Wilcoxon Signed Rank Test yielded $Z = -9.097$ with $p\text{-value} = 0.001$ ($p < 0.05$), indicating a statistically significant difference between pre- and post-oxygenation SpO₂.

Conclusion: The E-C Clamp technique is effective in improving and maintaining oxygen saturation in general anesthesia patients, with all respondents achieving SpO₂ 100% post-oxygenation and a statistically significant result ($p = 0.001$).

Keywords: E-C Clamp, oxygen saturation, SpO₂, oxygenation, general anesthesia.