

**DIFFERENCES IN THE NUMBER OF FIBROBLAST AND
NEOVASCULAR POST TO DENTAL EXTRACTION IN WISTAR RATS
(*Rattus norvegicus*) THAT PERFORM AEROBIC AND ANAEROBIC
CONTINUOUS EXERCISE**

ABSTRACT

Background: The prevalence of tooth extractions in the world in 2010 reached 2.4% and in Indonesia in 2018 reached 2.9 %. The process of wound healing after tooth extraction is expected to take place more quickly and optimally. Physical exercise has been proven to accelerate wound healing. Physical training itself has the type of aerobic and anaerobic exercise with the interval and continuous methods. Research on the effectiveness of aerobic and anaerobic continuous physical exercise in wound healing is the focus of this study. **Objective:** To prove the difference in effectiveness of post-tooth extraction wound healing in Wistar Rats (*Rattus norvegicus*) given aerobic and anaerobic continuous training based on the number of fibroblasts and neovascular. **Methods:** Wistar rats were divided into 3 groups, 1 control group (K1), continuous aerobic exercise (K2) treatment group, and anaerobic continuous exercise treatment group (K3). Rats were given treatment in the form of swimming every 3 times in 1 week for 6 weeks. The K2 group was given swimming training with the provisions of 50% KRM and 3% load, while the K3 group was given swimming training with the provisions of 65% KRM and 6% load. Fibroblasts and neovascular counts were examined 3 days after tooth extraction. Data were analyzed by statistical test One Way Anova. **Results:** There was a significant difference in the number of fibroblasts between the K2 and K3 groups. While the number of neovascular treatment groups (K2 and K3) there is no significant difference. **Conclusion:** There are differences in the number of fibroblasts after tooth extraction in Wistar Rats given aerobic and anaerobic continuous training.

Keywords : continuous aerobic physical exercise, continuous anaerobic physical exercise, fibroblasts, neovascular, wound healing

**PERBEDAAN JUMLAH FIBROBLAS DAN NEOVASKULAR PASCA
PENCABUTAN GIGI PADA TIKUS WISTAR (*Rattus norvegicus*) YANG
DIBERI LATIHAN KONTINU AEROBIK DAN ANAEROBIK**

ABSTRAK

Latar Belakang: Prevalensi pencabutan gigi di dunia pada tahun 2010 mencapai 2,4% dan di Indonesia pada tahun 2018 mencapai 2,9%. Sedangkan komplikasi pasca pencabutan gigi tersering adalah *dry socket* yang mencapai angka prevalensi 6,4%. Proses penyembuhan luka pasca pencabutan gigi diharapkan dapat berlangsung lebih cepat dan optimal. Latihan fisik terbukti dapat mempercepat penyembuhan luka. Latihan fisik sendiri memiliki jenis berupa latihan aerobik dan anaerobik dengan metode interval dan kontinu. Penelitian mengenai efektivitas latihan fisik kontinu secara aerobik dan anaerobik dalam penyembuhan luka menjadi fokus penelitian ini. **Tujuan:** Membuktikan perbedaan efektivitas penyembuhan luka pasca pencabutan gigi pada Tikus Wistar (*Rattus norvegicus*) yang diberi latihan kontinu aerobik dan anaerobik berdasarkan jumlah fibroblas dan neovaskular. **Metode:** Tikus Wistar dibagi menjadi 3 kelompok, 1 kelompok kontrol (K1), kelompok perlakuan latihan kontinu aerobik (K2), dan kelompok perlakuan latihan kontinu anaerobik (K3). Tikus diberi perlakuan berupa renang setiap 3 kali dalam 1 minggu selama 6 minggu. Kelompok K2 diberi latihan renang dengan ketentuan 50% KRM dan 3% beban, sedangkan kelompok K3 diberi latihan renang dengan ketentuan 65% KRM dan 6% beban. Jumlah fibroblas dan neovaskular diperiksa 3 hari setelah pencabutan gigi. Data dianalisa dengan uji statistika *One Way Anova*. **Hasil:** Terdapat perbedaan yang signifikan pada jumlah fibroblas antara kelompok K2 dan K3. Sedangkan jumlah neovaskular pada kelompok perlakuan (K2 dan K3) tidak terdapat perbedaan yang signifikan. **Kesimpulan:** Terdapat perbedaan jumlah fibroblas pasca pencabutan gigi pada Tikus Wistar yang diberi latihan kontinu aerobik dan anaerobik.

Kata Kunci : Latihan fisik kontinu aerobik, Latihan fisik kontinu anaerobik, fibroblas, neovaskular, penyembuhan luka