

# Pengaruh pemberian Siprofloksasin Peroral terhadap penyembuhan Ruptur Tendon Achilles : suatu uji experimental pada Tikus Putih Sprague Dawley = Effect of Oral Ciprofloxacin administration towards healing of Achilles Tendon Rupture : an experimental study on Sprague Dawley White Rats / Muhammad Nurul Qomaruzzaman

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## Abstrak

### <b>ABSTRAK</b><br>

Fluoroquinolon memiliki efek terhadap mekanisme penyembuhan ruptur tendon Achilles. Penelitian ini dilakukan untuk menilai efek siprofloksasin terhadap proses penyembuhan tendon in vivo. Efek obat diperiksa terhadap biomekanik dan histopatologik tendon Achilles tikus. Uji eksperimental ini menggunakan siprofloksasin selama 2 kali/hari selama 15 dan 35 hari berturut-turut. Asesmen pada tendon Achilles mencakup pengukuran ultimate tensile force (UTF) dan skor histopatologik Bonar. Rerata UTF dan skor proliferasi tenosit pada grup kontrol signifikan dibandingkan grup perlakuan pada protokol 15 hari  $p < 0.004$  dan  $p < 0.002$ . Tidak ada perbedaan bermakna pada skor kolagen, ground substance, dan vaskularisasi. Berdasarkan penelitian ini, siprofloksasin terbukti menurunkan kekuatan biomekanik, metabolisme tenosit, kolagen, dan matriks selama proses penyembuhan tendon Achilles model tikus.

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### <b>ABSTRACT</b><br>

Fluoroquinolon has a side effect on the healing process of Achilles tendon rupture. The purpose of this experimental research is to evaluate ciprofloxacin towards tendon healing (in vivo) in respect to biomechanic and histopathologic of Achilles tendon. Ciprofloxacin is administered 2 times per day within 15 and 35 days follow-up. After that, Achilles tendon is measured for ultimate tensile force (UTF) and Bonar histopathologic score. According to this research, the mean of UTF and tenocyte proliferation score is significant in control group compared to intervention group on day-15 ( $p < 0.004$  and  $p < 0.002$  consecutively). The statistical significance is narrow in collagen score, ground substance, and vascularization. Based on those findings, ciprofloxacin has been proven to reduce biomechanical force, tenocyte metabolism, collagen, and matrix during the healing process of Achilles tendon in rat model.