CURCUMIN SEBAGAI *PHOTOSENSITIZERS* TERAPI CAHAYA LED BIRU UNTUK PENYEMBUHAN LUKA INFEKSI SECARA IN VIVO

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Abstrak

Salah satu penyebab infeksi luka adalah bakteri *Staphylococcus Aureus*. Penelitian ini bertujuan untuk efektifitas fotoinaktivasi LED biru dengan curcumin untuk penyembuhan luka infeksi secara in vivo. Sampel terdiri dari (a) kontrol negatif, (b) curcumin, (c) LED biru, dan (d) tritmen LED biru dengan curcumin menggunakan dosis energi 10, 20, 30, dan 40 menit untuk melihat parameter yang diamati dengan uji Anova. Hasil penelitian pada mencit menunjukan bahwa presentase kolagen dan fibroblas dari setiap kelompok kontrol adalah kontrol negatif (1) kolagen sebesar 11.84% dan fibroblas 9,35%, LED (2) kolagen sebesar 16.94% dan fibroblas 25,29%, Curcumin (3) kolagen sebesar 13.07% dan fibroblas 24,49%, LED dengan Curcumin 10 menit (4) kolagen sebesar 21.98% dan fibroblas 23,23%, LED dengan Curcumin 20 menit (5) kolagen sebesar 36.72% dan fibroblas 24,17%, LED dengan Curcumin 30 menit (6) kolagen sebesar 45.31% dan fibroblas 26,13%, LED dengan Curcumin 40 menit (7) kolagen sebesar 55.17% dan fibroblas 26,85%. Kesimpulan dari hasil uji Histopatologi dengan control perlakuan curcumin dengan LED biru 40 menit menghasilkan jumlah kolagen sebanyak 55,17% dan fibroblas 26,85%, sedangkan analisis dengan pengujian secara makroskopik diketahui luka telah sembuh pada hari keenam pada kelompok kontrol tersebut.

Kata kunci : luka infeksi, curcumin, LED biru.

CURCUMIN AS PHOTOSENSITIZERS BLUE LED LIGHT THERAPY FOR WOUND HEALING IN VIVO INFECTION

Abstract

One cause of wound infection is a bacterium *Staphylococcus aureus*. This study aims to effectiveness photoinactivation blue LED with curcumin for wound healing in vivo infection. The sample consisted of (a) negative control, (b) curcumin, (c) a blue LED, and (d) tritmen blue LEDs with curcumin doses of energy 10, 20, 30, and 40 minutes to see the parameters observed by Anova. The results of the study in mice showed that the percentage of collagen and fibroblasts from each of the control group were negative control (1) amounted to 11.84% collagen and fibroblasts 9.35%, LED (2) collagen amounted to 16.94% and 25.29% fibroblasts, Curcumin (3) at 13:07% collagen and fibroblasts 24.49%, LED with Curcumin 10 minutes (4) collagen amounted to 21.98% and 23.23% fibroblasts, LED with Curcumin 20 minutes (5) th**e** collagen by fibroblasts 36.72% and 24.17%, LED with Curcumin 30 minutes (6) amounted to 45.31% collagen and fibroblasts 26.13%, LED with Curcumin 40 minutes (7) amounted to 55.17% collagen and fibroblasts 26.85%. Histopathology conclusion of the test results with a control treatment of curcumin with a blue LED 40 minutes to produce the amount of collagen as much as 55.17% and 26.85% fibroblasts, whereas macroscopic analysis by testing known injury has healed on day six in the control group.

Keywords: wound infections, curcumin, a blue LED