INTISARI

Penyembuhan primer terjadi apabila kedua tepi luka insisi saling berdekatan dan bertemu. Penyembuhan primer umumnya dilakukan dengan penjahitan. Saat ini berkembang cara penutupan luka insisi kulit tanpa penjahitan salah satunya dengan *zip surgical skin closure*. Kekuatan tarik merupakan indikator penyembuhan luka yang sering digunakan. Kekuatan tarik dihasilkan oleh kolagen dan produksinya dipengaruhi oleh TGF-β. Penelitian ini bertujuan mengetahui ekspresi TGF-β dan kekuatan tarik luka pasca insisi kulit pada penggunaan *simple interrupted suturing* dan *zip surgical skin cosure.*

Desain penelitian ini adalah *experimental laboratory* pada tikus *Sprague dawley* dengan inklusi kriteria yang sudah ditentukan. Tiga puluh enam ekor tikus diberi perlakuan insisi pada kulit bagian dorsal dengan panjang 3cm kemudian dibagi menjadi 2 kelompok, penjahitan *simple interrupted* dan *zip surgical skin closure*. Pemeriksaan TGF-β dengan antibodi poliklonal BS-0086R dan kekuatan tarik luka dilakukan pada hari ke-3, hari ke-7 dan hari ke-14.

Hasil uji *independent t-test* menunjukkan kekuatan tarik kelompok *zip surgical skin closure* lebih tinggi dibandingkan *simple interrupted suturing* pada hari ke-7 (p=0,000). Ekspresi TGF-β kelompok *zip surgical skin closure* lebih banyak dibandingkan kelompok *simple interrupted suturing* pada hari ke-7 dan hari ke-14, dengan p masing-masing 0,025 dan 0,032. Kesimpulan. Penyembuhan luka dengan *zip surgical skin closure* lebih baik daripada *simple interrupted suturing* dilihat dari ekspresi TGF-β dan kekuatan tarik kulit.

Kata kunci: *zip surgical skin closure, simple interrupted suturing*, ekspresi TGF-β, kekuatan tarik luka, penyembuhan luka.

ABSTRACT

Primary healing occurs when both edges of the adjacent incision wound meet. To achieve primary healing, bringing the wound edges closer is generally done by suturing. At present comes one of the methods of skin incision closure without involving sutures called zip surgical skin closure. As an indicator of commonly used wound healing, tensile strength is produced by collagen that involves TGF-β in its production. This study was aimed to observed the expression of TGF-β and tensile strength of the skin incision-post wound using simple interrupted suturing or zip surgical skin closure.

An experimental laboratory, this study used Sprague Dawley rats with the predetermined criteria inclusion. Thirty-six rats were applied with 3 cm-dorsal skin incisions after which they were divided into 2 groups, group 1 received simple interrupted suturing and group 2 received czip surgical skin closure. TGF-β examination was performed with BS-0086R polyclonal antibodies and wound tensile strength was observed on day 3, 7 and 14.

The results of statistical tests involving ANOVA test, independent t-test and LSD post-hoc test showed that the tensile strength of the zip surgical skin closure group was higher and was significant as observed on day 7 (p = 0.000) than that of the simple interrupted suturing group. TGF-β expression in the zip surgical skin closure group was found more numerous and significant on day 7 and 14 than that of in the simple interrupted group, scored in values (p = 0.025) and (p = 0.032) respectively. Conclusion. Skin incision-post wound healing with zip surgical skin closure is better and shows higher tensile strength and more numerous TGF-β expressions than simple interrupted suturing.

Keywords: *zip surgical skin closure, simple interrupted suturing, TGF-β expression, wound tensile strength, wound healing*