

## INTISARI

**Latar Belakang:** Luka bakar merupakan masalah kesehatan dunia yang juga dialami 0,7% penduduk di Indonesia. Semakin dalam luka bakar maka semakin lama waktu untuk penyembuhan luka. *Dressing* berbahan dasar silver adalah terapi standar luka bakar namun bersifat sitotoksik terhadap keratinosit dan fibroblast yang dapat mengganggu penyembuhan luka. Terapi luka tekanan negatif (TLTN) merupakan terapi alternatif yang direkomendasikan untuk berbagai macam lesi termasuk luka bakar.

**Tujuan:** Untuk membandingkan jumlah sebulan sel radang hari ke 1, 3, 7, 14 dan 21 pada luka bakar dermal dalam yang mendapat TLTN *intermitten*, TLTN *continuous*, kassa NaCl 0.9%, dan kassa *silver sulfadiazine* pada kulit babi.

**Metode:** Enam babi Yorkshire lalu dibuat model luka bakar dalam sebanyak 20 buah tiap ekornya lalu didapatkan 120 sampel diambil dari blok paraffin kemudian dirawat lukanya dengan 4 macam perlakuan, yaitu kassa NaCl 0,9%, TLTN *continuous*, TLTN *intermitten* dan kassa *silver sulfadiazine*. Dilakukan pemeriksaan mikroskopis dengan pengecatan HE, dihitung jumlah sebulan sel radangnya (limfosit, neutrofil dan sel plasma). Data dianalisis dengan SPSS Versi 22.0.

**Hasil:** Terdapat perbedaan signifikan rerata jumlah neutrofil dan limfosit setelah perlakuan TLTN *continuous*, dengan peningkatan neutrofil dan limfosit hingga hari ke-14 dan menurun pada hari ke-21 ( $p < 0,05$ ). Namun, tidak terdapat perbedaan signifikan rerata jumlah plasma di semua kelompok perlakuan ( $p > 0,05$ ).

**Simpulan:** Tidak terdapat perbedaan yang bermakna antara jumlah sel radang pada luka bakar dermal dalam yang mendapat TLTN *intermitten*, TLTN *continuous*, terapi *dressing* dengan NaCl 0.9%, kassa steril dan silver sulfadiazine pada hari ke 1, 3, 7, 14 dan 21.

**Kata Kunci:** limfosit, luka bakar dermal dalam, neutrofil, sel plasma, TLTN *intermitten*, TLTN *continuous*

## **ABSTRACT**

**Background:** Burns are injuries that occur to the skin or other tissues by heat, radiation, electricity, friction or contact with chemicals. In acute burns, the inflammatory phase lasts for the first 5<sup>th</sup> to 7<sup>th</sup> days, but severe burns may exhibit chronic and persistent inflammation long after the initial tissue damage. Negative pressure wound therapy (NPWT) has been used to treat wounds since the late 1990s and has been recommended for a variety of lesions including burns.

**Purpose:** To compare the number of inflammatory cell spurts on 1<sup>st</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day in deep dermal burns that received intermittent NPWT, continuous NPWT, 0,9% NaCl gauze and silver sulfadiazine gauze on pig skin.

**Methods:** One hundred and twenty samples were taken from paraffin blocks of Yorkshire pig skin that had deep dermal burns which were then treated with four different treatments, namely treating the wound with 0,9% NaCl, continuous NPWT, intermittent NPWT and silver sulfadiazine. Then a microscopic examination was carried out with HE staining, the number of inflammatory cells (lymphocytes, neutrophils and plasma cells) was counted. The data obtained was then analyzed using the SPSS Version 23 application.

**Results:** There was a significant difference in the average levels of lymphocytes and neutrophils after the NPWT treatment was persistent, where there was an increase in lymphocytes and neutrophils until the 14th day and then experienced a slight decrease on the 21<sup>st</sup> day ( $p < 0,05$ ). However, there was no significant difference in mean plasma levels in all treatment groups ( $p > 0,05$ ).

**Conclusion:** There was no significant difference between the number of inflammatory cells in deep dermal burns that received intermittent NPWT, continuous NPWT, dressing therapy with 0.9% NaCl, sterile gauze and silver sulfadiazine on 1<sup>st</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day.

**Keywords:** Continuous NPWT, deep dermal burns, intermittent NPWT, lymphocytes, neutrophils, plasma cells.