

**EFEK PEMBERIAN MEMBRAN AMNION KERING TERHADAP
EKSPRESI PLATELET DERIVED GROWTH FACTOR PADA
PENYEMBUHAN LUKA PASCA TRAUMA TEMBUS GASTER
(STUDI PADA KELINCI NEW ZEALAND)**

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Latar Belakang

Tatalaksana untuk trauma tajam abdomen terutama yang mengenai organ gaster terus mengalami perkembangan. Meskipun teknologi dalam bidang pembedahan semakin maju, resiko komplikasi akibat kebocoran jaringan pasca penjahitan masih sering terjadi. Banyak dilakukan penelitian untuk meningkatkan proses penyembuhan jaringan, termasuk berbagai macam teknik pembedahan dan penggunaan material. Membran amnion merupakan material yang banyak dipakai untuk membantu merangsang proses penyembuhan. Membran amnion mengandung faktor pertumbuhan, salah satunya *platelet-derived growth factor* (PDGF). PDGF merupakan *major player* dalam proses penyembuhan luka.

Tujuan

Membuktikan terdapat perbedaan kadar PDGF pada repair ruptur gaster dengan membran amnion kering sebagai *biologic dressing* dibandingkan dengan repair primer ruptur gaster tanpa menggunakan membran amnion kering.

Metode

Penelitian berupa penelitian analitik eksperimental, dengan menggunakan 42 sampel kelinci yang dikelompokkan menjadi 2 kelompok yaitu kelompok kontrol dan perlakuan. Dilakukan perlukaan sepanjang 2 cm dengan lebar 0,5 cm dengan kedalaman seluruh dinding gaster pada corpus gaster dan dilakukan repair ruptur dengan 4-6 jahitan terputus menggunakan benang monofilament polypropylene 5/0. Pada kelompok kontrol hanya dilakukan penjahitan dan pada kelompok perlakuan diberikan membran amnion kering sebelum penjahitan. Ekspresi dari PDGF diperiksa dari jaringan jahitan pada hari ke-7.

Hasil

Skor intensitas didapatkan pada kelompok perlakuan paling banyak berskor 2 dengan sampel berjumlah 11 (52.4%) begitu juga pada kelompok kontrol sebanyak 13 (61.9%) sampel yang memiliki skor 2. Skor ekstensi didapatkan pada kelompok perlakuan paling banyak berskor 1 dengan jumlah sampel sebanyak 10 (47.6%) sedangkan pada kelompok kontrol memiliki skor terbanyak berskor 0.5 sebanyak 14 (66.7%). Setelah didapatkan nilai intensitas dan ekstensi PDGF, kemudian dikalikan kedua nilai ini untuk mendapatkan ekspresi PDGF. Dari hasil uji perbandingan menggunakan uji Mann Whitney didapatkan perbedaan ekspresi PDGF yang signifikan antara kelompok perlakuan dan kelompok kontrol dengan $p=0,010$ ($p<0,05$).

Kesimpulan

Pemberian membran amnion kering pada luka pada gaster akan meningkatkan ekspresi PDGF pada daerah luka.

Kata kunci: membran amnion kering, PDGF, trauma tembus gaster

**THE EFFECT OF DRIED AMNION MEMBRANE APPLICATION IN THE
EXPRESSION OF PLATELET DERIVED GROWTH FACTORS IN THE
HEALING PROCESS OF STOMACH STAB WOUND
(STUDY ON NEW ZEALAND RABBIT)**

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Background

Management of penetrating abdominal trauma, especially those affecting the stomach, keeps developing. Although the technology in the field of surgery is getting more advanced, the risk of complications due to leakage is still common. A lot of research is being done to improve the tissue healing process, including a variety of surgical techniques and material uses. The amniotic membrane is a material that is widely used to help stimulate the healing process. The amniotic membrane contains growth factors, one of which is platelet-derived growth factor (PDGF). PDGF is a major player in the wound healing process.

Purpose

To investigate the differences in PDGF levels in gastric rupture repair with dry amniotic membrane as a biological dressing compared to primary repair of gastric rupture without using dry amniotic membrane.

Method

This research was an experimental analytical study, using 42 samples of rabbits which were grouped into 2 groups, namely the control and treatment groups. Stab wound of 2 cm by 0.5 cm wide with a depth entire gastric wall in gastric corpus was done and repaired with 4-6 interrupted suture using 5/0 polypropylene monofilament. In the control group, the wound was only sutured and the treatment group, dry amniotic membrane was applicated before suturing. The expression of PDGF was examined from the suture tissue on day-7.

Result

Intensity score was obtained in the treatment group with the highest score of 2 with a sample of 11 (52.4%) as well as in the control group as many as 13 (61.9%) samples who had a score of 2. The extension score was obtained in the treatment group with the highest score of 1 with a total sample size of 10 (47.6%) while the control group had the highest score with a score of 0.5 as much as 14 (66.7%). After obtaining the PDGF intensity and extension values, then these two values are multiplied to get the PDGF expression. From the results of the comparison test using the Mann Whitney test, it was found that the difference in PDGF expression was significant between the treatment group and the control group with $p = 0.010$ ($p < 0.05$).

Conclusion

Applying dry amniotic membrane to the wound on the stomach will increase the expression of PDGF in the wound area.

Keywords: dry amniotic membrane, PDGF, gastric penetrating trauma