

**PERBANDINGAN ANASTOMOSIS KOLON DALAM KONDISI INFEKSI  
INTRAPERITONEAL DENGAN MENGGUNAKAN MEMBRAN AMNION  
KERING DAN FIBRIN GLUE DITINJAU DARI PENGUKURAN KADAR  
HYDROXYPROLIN JARINGAN  
(STUDI PADA TIKUS WISTAR)**

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**ABSTRAK**

**Latar Belakang :** Kebocoran anastomosis pada kolon menjadi salah satu penyebab morbiditas dan mortalitas yang tinggi pada kasus infeksi. Angka morbiditas dan mortalitas pada pasien dengan kebocoran anastomosis kolon berkisar 7–39%. Berbagai upaya untuk mencegah kebocoran anastomosis telah dilakukan seperti perubahan teknik jahitan dan penggunaan material tambahan. Material seperti lem fibrin dan membran amnion mulai dipakai dalam proses penyembuhan luka.

**Tujuan :** Membuktikan penggunaan membran amnion kering memberikan hasil anastomosis kolon yang lebih baik dibandingkan dengan penggunaan fibrin glue dalam kondisi infeksi intra peritoneal ditinjau dari pengukuran kadar hydroxyprolin pada usus tikus.

**Metode :** Penelitian ini merupakan studi eksperimental yang menggunakan hewan coba tikus wistar. Subyek penelitian dibagi menjadi 3 kelompok, kelompok I (anastomosis menggunakan teknik simpul terputus), kelompok II (anastomosis dengan menambahkan membran amnion kering) dan kelompok III (anastomosis dengan menambahkan fibrin glue). Segmen anastomosis diambil dan dijadikan homogenate yang kemudian diperiksa kadar hydroxyproline.

**Hasil :** Penelitian dilakukan terhadap 27 tikus coba jenis Ratus Novergicus jantan yang telah dipilih berusia 10-12 minggu dengan berat badan 250-300 gram. Didapatkan perbedaan rata-rata kadar hydroxyprolin per 1 miligram jaringan yaitu pada kelompok I = 2157,41 ( $\pm$ SD = 478,60), kelompok II = 2887,40 ( $\pm$ SD = 688,49) kelompok III = 2224,59 ( $\pm$ SD = 416,63). Uji ANOVA pada kadar hydroxyprolin sampel menunjukkan bahwa  $p < 0.05$  (0,015) artinya ada perbedaan kadar hydroxyprolin secara statistik yang bermakna pada ketiga kelompok sampel perlakuan tersebut. Uji Post Hoc ANOVA menunjukkan bahwa kadar hydroxyprolin pada kelompok perlakuan II (Jahit Interrupted + MAK) memiliki Mean Difference (selisih rerata) yang paling tinggi (positif dibandingkan kelompok lainnya), dengan uji signifikansi  $p < 0.05$  artinya kadar hydroxyprolin pada kelompok perlakuan II (Jahit Interrupted + MAK) paling tinggi dan hal ini signifikan secara statistik.

**Kesimpulan :** Berdasarkan hasil penelitian dapat disimpulkan bahwa penggunaan membran amnion memberikan anastomosis kolon yang lebih baik dibandingkan dengan penggunaan fibrin glue dalam kondisi infeksi intra peritoneal, dimana terdapat peningkatan kadar *hydroxyprolin* jaringan anastomosis usus yang dibalut membran amion kering dengan hasil yang bermakna secara statistik.

**Kata Kunci :** anastomosis kolon, peritonitis, lem fibrin, membran amnion kering, kolagen, hydroxyprolin

**COMPARISON OF COLONIC ANASTOMOSIS USING DRY AMNION MEMBRANE AND FIBRIN GLUE IN INTRAPERITONEAL INFECTION CONDITION ASSESSED FROM TISSUE HYDROXYPROLINE LEVEL MEASUREMENT (STUDY ON WISTAR RAT)**

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**ABSTRACT**

**Background** : Anastomotic leak in the colon is one of the causes of high morbidity and mortality in infectious cases. The morbidity and mortality rates in patients with colonic anastomotic leakage range from 7–39%. Various efforts have been made to prevent leakage, such as changing suture techniques and using additional materials. Materials such as fibrin glue and amniotic membranes are gaining popularity in the wound healing process.

**Purpose** : To compare the use of dry amniotic membrane and fibrin glue in colonic anastomosis in intraperitoneal infection assessed with tissue hydroxyproline level measurement.

**Method** : This study is an experimental. The subjects were divided into 3 groups, group I (anastomosis using a simple interrupted suture only), group II (anastomosis and was applied with dry amniotic membrane) and group III (anastomosis using a simple interrupted suture and was applied with fibrin glue). The anastomotic segment was taken and made into homogenate, then measured for the hydroxyproline level.

**Result** : The study was conducted on 27 Wistar rats, male rats that have been aged 10-12 weeks with the weight of 250-300 grams. It was obtained the differences in average levels hydroxyproline in the group I = 2157.41 ( $\pm$  SD = 478.60), group II = 2887.40 ( $\pm$  SD = 688.49) and group III = 2224.59 ( $\pm$  SD = 416.63). ANOVA test at hydroxyproline samples showed that  $P < 0.05$  (0.015) means that there are statistically significant differences in the levels of hydroxyproline in all three groups of samples. Post Hoc test of ANOVA showed that the levels of hydroxyproline in the group II (Interrupted suture + Dry amniotic membrane) has the most high mean difference with the significance of  $p < 0.05$  means that the levels of hydroxyproline in the group is most significant.

**Conclusion** : Based on the results of the study, it can be concluded that the use of the dry amniotic membrane was better than fibrin glue of colonic anastomosis in conditions of intra-peritoneal infection, there was an increase in hydroxyproline levels of colonic anastomosis tissue applied in dry amniotic membrane with statistically significant results.

**Keywords** : colonic anastomosis, peritonitis, fibrin glue, dry amniotic membrane, collagen, hydroxyproline