Hubungan Pemberian Probiotik Lactobacillus Acidophilus terhadap Kadar C-Reactive Protein pada Pasien Pascalaparotomi Gastrointestinal = The Relationship between Lactobacillus acidophilus Probiotic administration and C-Reactive Protein levels in patients After Undergoing Gastrointestinal Laporotomy

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Abstrak

Latar belakang: Laparotomi merupakan teknik operasi untuk membuka akses kavitas peritoneum dengan membentuk sayatan terbuka di area abdomen. Cedera mukosa akibat trauma pembedahan mengganggu homeostasis epitel, merusak ekosistem mikrobiom, meningkatkan produksi sitokin proinflamasi dan berkaitan dengan kejadian komplikasi pascaoperatif. Probiotik Lactobacillus acidophillus memperkuat sawar usus, mempertahankan ekosistem mikrobiom dan berpotensi memodulasi respon imun. Namun, belum terdapat penelitian mengenai dampak pemberian Lactobacillus acidophilus terhadap kadar c-reactive protein (CRP) pascalaparotomi gastrointestinal sebagai penanda inflamasi

Tujuan: Penelitian ini bertujuan untuk mengetahui dampak pemberian Lactobacillus acidophilus terhadap kadar CRP pascalaparotomi gastrointestinal

Metode: Penelitian ini merupakan uji klinis acak tersamar ganda. Sebanyak 56 subjek yang akan menjalani operasi laparotomi gastrointestinal dimasukkan ke dalam penelitian. Subjek penelitian diberikan kapsul probiotik Lactobacillus acidophilus 109 (kelompok probiotik) atau diberikan kapsul laktosa (kelompok plasebo) selama 3 hari sebelum operasi. Kadar CRP diukur 3 hari sebelum prosedur dan 3 hari sesudah prosedur.

Hasil: Lima puluh enam subjek dengan 28 subjek pada tiap kelompok, mengikuti penelitian hingga selesai. Pada hari ketiga pascaoperatif, probiotik secara efektif menurunkan peningkatan respon inflamasi dengan nilai akhir CRP pada kelompok probiotik lebih rendah dibandingkan kelompok plasebo (median probiotik 89,65 mg/L vs. plasebo 204 mg/L, $p < 0,001$). Perubahan peningkatan nilai CRP lebih rendah pada kelompok probiotik dibandingkan kelompok plasebo (median probiotik 84,8 mg/L vs. plasebo 187,6 mg/L, $p < 0,001$). Terdapat efek samping yang signifikan (mual, diare, muntah dan rasa kembung di perut) pada kelompok probiotik selama penelitian ($p = 0,04$).

Simpulan: Pemberian probiotik preoperatif menurunkan secara signifikan peningkatan CRP pada pasien pascalaparotomi gastrointestinal

.....Background: Laparotomy is a surgical technique to open access to the peritoneal cavity by forming an open incision in the abdominal area. Mucosal injury due to surgical trauma can disrupt epithelial homeostasis, impair the microbiome ecosystem, increase the production of proinflammatory cytokines and relating to the incidence of postoperative complications. Lactobacillus acidophillus probiotic administration improve the intestinal barrier function, maintains the microbiome ecosystem and potentially modulate

immune responses. However, there has been no research on the impact of Lactobacillus acidophilus administration on C-Reactive Protein (CRP) levels after gastrointestinal laparotomy as a marker of inflammation.

Objective: This study aimed to determine the impact of Lactobacillus acidophilus on CRP levels after gastrointestinal laparotomy

Methods: This study is a randomized controlled trial. Fifty six subjects scheduled gastrointestinal laparotomy surgery were enrolled. Subjects received Lactobacillus acidophilus 109 probiotic capsules (probiotic group) or lactose capsules (placebo group) for 3 days before surgery. CRP levels were measured 3 days before the procedure and 3 days after the procedure.

Results: Fifty-six subjects with 28 subjects in each group completed the study. On the third postoperative day, probiotics effectively suppressed the elevating inflammatory response with the final CRP value in the probiotic group lower than the placebo group (median probiotic 89.65 mg/L vs. placebo 204 mg/L, $p < 0.001$). Elevated CRP values were lower in the probiotic group than in the placebo group (median probiotic 84.8 mg/L vs. placebo 187.6 mg/L, $p < 0.001$). There was a significant side effects (nausea, diarrhea, vomiting, and bloating) in the probiotic group during study ($p = 0.04$).

Conclusions: Preoperative probiotic administration significantly reduced elevated CRP in patients After Undergoing Gastrointestinal Laporotomy.