Research Article

The Probiotic Effect towards Aspirin-induced Gastric Ulcer Healing Process as Measured by Mucous Thickness, Reepithelization, Gastric Glands Formation, and Angiogenesis in Animal Model

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Abstract

Gastric Ulcer is a common side effect of Non-Steroid Anti Inflammatory Drugs (NSAIDs) use such as Aspirin. Probiotic has many benefits especially for the alimentary system, but the effect on gastric ulcer have yet to be explored. In this research we aimed to find the probiotic effect on histological structure changes during aspirin induced gastric ulcer healing process in animal model. This was simple random sampling animal experimental laboratory, that divided Wistar Rats into two main groups. Both groups were induced with Aspirin (300mg/Kg BW) per oral, once daily for three consecutive days,and subsequently the test group were given probiotic suspension (cfu $>10^8$/gr) per oral, once daily, for 14 days. Each subgroups were sacrified serially at day 0, 3, 7, 14. The gaster were collected and processed for histology examination. Better histological structures were shown in the test group at day 14. MANOVA result showed probiotic's effect in enhancing histological structure changes during gastric ulcer healing process. Better histological structure changes were observed in mucus thickness; reepitelization, gastric glands formation, and angiogenesis process of the test group. As a conclusion, probiotic enhanced mucus thickness, reepitelization, glands remodelling, and angiogenesis in Aspirin induced gastric ulcer healing process in animal model.

Key words: *probiotic, gastric ulcer, histological structure, aspirin, healing process*

Research Article

Peran Probiotik dalam Penyembuhan Ulkus Gaster Akibat Aspirin Ditinjau dari Ketebalan Mukus, Proses Reepitelisasi, Pembentukan Glandula, dan Angiogenesis pada Hewan Model

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Abstrak

Ulkus gaster sering terjadi sebagai efek samping penggunaan obat Anti-Inflamasi Non Steroid (AINS). Pemberian bakteri Probiotik secara adekuat akan memberikan keuntungan kesehatan terutama bagi organ pencernaan, tetapi manfaatnya terhadap ulkus gaster masih belum banyak diteliti. Tujuan penelitian ini adalah untuk melihat efek pemberian probiotik terhadap perubahan struktur histologis mukosa gaster dalam proses penyembuhan ulkus gaster akibat pemberian aspirin pada hewan model. Metode penelitian adalah eksperimental laboratoris dengan Rancang Acak Sederhana menggunakan 2 kelompok Tikus Wistar, yang diinduksi 1 kali sehari selama 3 hari berturut-turut dengan Aspirin (300mg/Kg BB). Kelompok perlakuan kemudian diberi suspensi probiotik (cfu $>10^8$/gr) melalui sonde oral satu kali sehari selama 14 hari. Hewan model pada tiap kelompok dikorbankan secara serial (hari 0,3,7,14). Organ gaster diambil dan dibuat preparat histologi. Uji MANOVA menunjukkan bahwa pemberian probiotik memperbaiki proses penyembuhan ulkus gaster. Hal tersebut tampak pada perubahan struktur histologis mukosa gaster berupa ketebalan mukus yang lebih tebal; proses reepitelisasi, pembentukan glandula gastrika, dan angiogenesis yang lebih baik pada kelompok perlakuan. Simpulan penelitian ini probiotik meningkatkan ketebalan mukus, membantu pembentukan reepitelisasi, glandula, dan angiogenesis dalam proses penyembuhan ulkus gaster akibat pemberian Aspirin pada hewan model.

Kata kunci: probiotik, ulkus gaster, struktur histologis, aspirin, proses penyembuhan