Steve Harakeh, J Gastrointest Dig Syst 2016, 6:7(Suppl)
http://dx.doi.org/10.4172/2161-069X.C1.043

Effects of manuka honey on gastric ulcers in rats

Steve Harakeh[1], **Saad Almasaudi**[1], **Nagla El-Shitany**[1,2], **Aymn Abbas**[1,3], **Umama Abdel-dayem**[1], **Soad Ali**[1] and **Soad Al Jaouni**[1]
[1]King Abdulaziz University, KSA
[2]Tanta University, Egypt
[3]Mansoura University, Egypt

Background & Objectives: Gastric ulcers are among the most common diseases affecting humans. This study aimed at investigating the gastro protective effects of manuka honey against ethanol-induced gastric ulcers in rats. The mechanism by which honey exerts its antiulcer potential was elucidated.

Methods: Four groups of rats were used: control, ethanol (ulcer), omeprazole, and manuka honey. Stomachs were examined macroscopically for hemorrhagic lesions in the glandular mucosa, histopathological changes, and glycoprotein detection. The effects of oxidative stress were investigated using the following indicators: gastric mucosal nitric oxide (NO), reduced glutathione (GSH), lipid peroxide (MDA, measured as malondialdehyde) glutathione peroxidase (GPx), superoxide dismutase (SOD) and catalase. Plasma tumor necrosis factor-α, interleukin-1β, and IL-6 were also measured.

Results: Manuka honey significantly decreased the ulcer index, completely protected the mucosa from lesions, and preserved gastric mucosal glycoprotein. It significantly increased gastric mucosal levels of NO, GSH, GPx, and SOD. Manuka honey also decreased gastric mucosal MDA and plasma TNF-α, IL-1β, and IL-6 concentrations.

Conclusion: Manuka honey likely exerted its antiulcer effect by keeping enzymatic (GPx and SOD) and non-enzymatic (GSH and NO) antioxidants as well as inflammatory cytokines (TNF-α, IL-1β, and IL-6) in a reduced form, inhibited lipid peroxidation (MDA), and preserved mucous glycoproteins levels.

Biography

Steve Harakeh received his BSc and MSc from the American University of Beirut (AUB). He was awarded his PhD degree in Microbiology from the University of Surrey, UK. He spent two years as a Postdoctoral Research Fellow in the Microbiology and Immunology Department, School of Medicine, at Stanford University, USA, and then he was appointed as a Research Associate (Research Assistant Professor) in the same department. He joined the Linus Pauling Institute for Science and Medicine where he worked and published with Professor Pauling who is the only holder of two unshared Noble prizes in the world. After that he was appointed as a Professor of Microbiology at the AUB. Then he worked as a research professor at Dr. Rath Research Institute in California, USA. Currently, he is a Professor at the Special Infectious Agents Unit – Biosafety Level 3 (SIAU). He is the Vice Chairman of the KFMRC Quality Control and Biosafety Committee, member of infectious disease research group. He has recently been appointed as a member of "Yousef Abdullatif Jameel Research Chair for Prophetic Medicine" and is already engaged with them in several ongoing research projects. He is the recipient of several awards and research grants and published over seventy papers in peer reviewed journals and contributed to publishing chapters in many international scientific books.

sharakeh@gmail.com
sharakeh@kau.edu.sa

Notes: