

Effect of Mangosteen Pericarp Extract on Gastric Mucosal Damage Induced by Aspirin

Jansen Budiono,¹ Achadiyani,² Dolvy Girawan³

¹Faculty of Medicine, Universitas Padjadjaran, ²Department of Anatomy and Cell Biology Faculty of Medicine Universitas Padjadjaran, ³Department of Internal Medicine Faculty of Medicine Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital Bandung

Abstract

Background: Peptic ulcer disease is commonly found in the community. Nonsteroidal anti-inflammatory drug (NSAID) such as aspirin is one of the predisposing factors to ulcers. According to various studies, plant extracts have been shown to produce promising results in the treatment of peptic ulcers. Xanthone, the active substance contained in the mangosteen pericarp extract has been extensively studied for its role in various diseases. The present study was undertaken to identify the effect of mangosteen pericarp extract on gastric mucosal damage.

Methods: This study was carried out from September–November 2014 in the Animal Laboratory of the Department of Pharmacology and Therapy, Faculty of Medicine, Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Bandung. Thirty two rats were randomly divided into 2 groups with different treatments and were induced by aspirin. Histologic studies were conducted to determine the score of gastric mucosal damage. The parameters used were Wattimena's criteria for damage of gastric mucosa. Data was analyzed using Chi Square test and the outcome was measured in relative risk.

Results: The study revealed a significant association between pretreatment with mangosteen pericarp extract and incidence of gastric mucosal damage induced by aspirin ($p < 0.05$). Calculation with a modified 2×2 table revealed a relative risk of 0.625.

Conclusions: Rats pretreated with mangosteen pericarp extract exhibit less gastric mucosal damage, in experimentally aspirin-induced ulcer. [AMJ.2016;3(3):388-91]

Keywords: Aspirin, gastric mucosal damage, mangosteen pericarp extract

Introduction

Peptic ulcer is commonly found in the community. Its impact has been substantial proven to increase morbidity, and serious complications lead to mortality.

Nonsteroidal anti-inflammatory drug (NSAID) such as aspirin is one of the predisposing factors to ulcers.¹ Unfortunately, Aspirin and NSAIDs are among the most frequently used drugs worldwide.² Prevention of peptic ulcer due to NSAID use is an important clinical issue.

Furthermore, herbal medicine is still widely used until presently due to better cultural acceptability. According to various studies, plant extracts have been shown to produce promising results in the treatment of peptic ulcers.³ Mangosteen pericarp extract which

contained xanthone as its active substance, has now become widely available as a nutraceutical (or food supplements) and further studies on its therapeutic benefits would considerably benefit the general population.⁴

The present study was conducted to identify the effect of mangosteen pericarp on gastric mucosal damage.

Methods

This animal experimental study was carried out from September–November 2014 in the Animal Laboratory of Department of Pharmacology and Therapy, Faculty of Medicine, Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Bandung. Experimental protocols had been approved by the Health Research Ethics Committee of the

Correspondence: Jansen Budiono, Faculty of Medicine, Universitas Padjadjaran, Jalan Raya Bandung-Sumedang Km.21, Jatinangor, Sumedang, Indonesia, Phone: +6287883083019 Email: Jansenbudiono@hotmail.com