

Chapter 16

A Study on Anti-Inflammatory Analgesic Effect of Focus Religiosa Compared to Standard Drugs in Wister Rats

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ABSTRACT

Inflammation is caused by tissue damage, which is caused by pathogenic causes such tissue injury, infection, or cardiac infarction. Inflammation can be caused by either infectious or noninfectious triggers. Inflammation is characterized by redness, heat, swelling, pain, and loss of tissue function, which results from local vascular, immune, and inflammatory cell responses to any infection or injury. When a tissue is damaged, our bodies send out a series of chemical signals to trigger reactions that promote tissue repair. All of these cues stimulate circulating leukocytes to chemotactically migrate to the site of injury. As a result of being activated, leukocytes release cytokines, which set off other inflammatory processes in the body. Inflammatory disorders can be treated with a wide variety of medications nowadays. Nonsteroidal anti-inflammatory medicines (NSAIDs) and steroidal anti-inflammatory drugs (NSAIDs) are two examples that have proven effective. However, due to the potential for major side effects, their usage is limited.

1. INTRODUCTION

Chronic inflammation may be insidious in onset or may follow acute inflammation (Veeraiah, et al., 2022). It is of longer duration and is related to the proliferation of blood vessels, fibrosis and tissue destruction, along with the presence of lymphocytes and macrophages (Bennet and Brown, 2003). Basically,

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the ideal treatment for any pain is to cure the cause: hence, before the treatment planning, we should go for the diagnosis (Dey, et al., 1995). Sometimes, only treating the underlying cause does not give immediate relief from the pain (Fan, et al., 2014). In addition to this, certain disorders, such as trauma, post-operative pain, cancer, and others, can cause excruciating pain and necessitate the use of analgesics that work quickly and efficiently (Paramasivan & Venkatesh, 2016). Strong analgesics, such as opioid medication, are essential for relieving the excruciating pain caused by cancer metastases (Ambika, et al., 2019). Inflammation is characterized by redness, heat, swelling, pain, and loss of tissue function, all of which come from local vascular, immunological, and inflammatory cell responses to any infection or injury. Inflammation can occur in response to any type of injury or infection (Gulecha, et al., 2011). Opioid analgesics have been utilized for a long time as a therapy option for both acute and chronic pain due to the effectiveness of these medications (Vashishtha, et al., 2020). Frequent use of drugs belonging to this class is being discouraged as a result of concerns over their acceptability and safety (Gupta, 2009). In addition, reports linking them to drug misuse and dependence have led to a general decrease in acceptance of these behaviors among many people (Laurence and Bacharach, 1964). Because opioids are known to cause addiction, extensive research has been done to find molecules that do not have the same adverse effects (Lowensten, 2005).

The aggressive function of inflammation is now well understood, along with its significance in the healing and restoration process (Kaur, et al., 2011). Inflammation is now understood to include the whole process, from the onset of a reaction, through the emergence of the classic indications listed above, through the final stages of healing and return to the normal look and function of the affected organ or tissue (Makhija, et al., 2010). However, in other cases, the underlying cause cannot be identified, and chronic inflammation develops, which may endure for years or even a lifetime (Mittal, et al., 2019). Conditions including rheumatoid arthritis, osteoarthritis, psoriasis, inflammatory bowel illness, etc., fall under this category (Sharma, et al., 2016).

Inflammation research necessitates interdisciplinary efforts (Saxena, 2022). The study of the immune system is often required to comprehend the occurrences associated with the initiation and maintenance of inflammatory diseases (Sreelekshmi, et al., 2007). In order to determine a person's susceptibility to inflammatory diseases, scientists now consider the molecular biology and genetics underpinning cellular responses to be of equal importance (Vogel, et al., 2002). However, pharmacological research is crucial for pinpointing the causes of persistent and sometimes fatal inflammation and creating effective novel therapeutics. Studies of immunological and cellular responses, as well as the pharmacological process that underlies medication discovery, are thus crucial to the study of inflammation (Turner, 1965).

1.1. Aim of the Study

To evaluate the anti-inflammatory & analgesic activity of Ficus Religiosa bark & leaf extract in Wistar Rats.

1.2. Objectives

- To prepare a methanolic extract of leaves and stem bark of Ficus Religiosa.
- To evaluate the analgesic activity of two different doses of the above extract.
- To evaluate the anti-inflammatory activity of the above extracts in two different doses by using carrageenan-induced paw oedema.

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