

## Determination of Antibacterial Activity of Anacyclus Pyrethrum Extract against Some of the Oral Bacteria: An In Vitro Study

Jalayer Naderi N.<sup>a</sup>, Niakan M.<sup>b</sup>, Khodadadi E.<sup>c</sup>

<sup>a</sup> Dept. of Oral and Maxillofacial Pathology, School of Dentistry, Shahed University, Tehran, IRAN

<sup>b</sup> Dept. of Microbiology, School of Medicine, Shahed University, Tehran, IRAN

<sup>c</sup> School of Dentistry, Shahed University, Tehran, IRAN

### KEY WORDS

Anacyclus Pyrethrum;  
Antibacterial effect,  
Oral cavity

### ABSTRACT

**Statement of Problem:** There are more than 500 different bacterial species in the oral cavity which can cause tooth decay and periodontal diseases. Anacyclus Pyrethrum has been used to manage dental and periodontal diseases in traditional Iranian medicine.

**Purpose:** The purpose of this study was to determine the antibacterial activity of Anacyclus Pyrethrum against some of the oral bacteria, such as Staphylococcus aureus, Streptococcus mutans, Streptococcus sanguis and Pseudomonas aeruginosa.

**Materials and Method:** At first, The antibacterial effect of serial concentrations (1/10 to 1/100 mg/ml) of methanolic extract of Anacyclus Pyrethrum root were tested by using well assay method on Staphylococcus aureus, Streptococcus mutans, Streptococcus sanguis and Pseudomonas aeruginosa. In the second examination, 150-1000 mg/ml concentrations were tested and the agar dilution method, recommended by the Clinical and Laboratory Standards Institute Standards, was used. Then, the lowest concentrations of the extract which inhibited visible growth of organisms on the media plate; Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC), were determined.

**Results:** The inhibition zone was only seen in the 1.10 mg/ml concentration. The diameters were 15 and 12 mm in Staphylococcus aureus and Streptococcus sanguis agar media plate, respectively. In the second examination, the greatest inhibition zones were 27 mm for Staphylococcus aureus and 21 mm for Streptococcus sanguis in 1000 mg/ml. There was not any inhibition zone for Streptococcus mutans and Pseudomonas aeruginosa in the concentrations. The MBC was achieved as 800 mg/ml for Staphylococcus aureus and Streptococcus sanguis. Streptococcus mutans and Pseudomonas aeruginosa grew in all the concentrations.

**Conclusion:** The antibacterial effect of Anacyclus Pyrethrum extract against Staphylococcus aureus and Streptococcus sanguis was not significant. Anacyclus Pyrethrum had no antibacterial effect against either Streptococcus mutans or Pseudomonas aeruginosa.

\* Corresponding author. Jalayer Naderi N., Dept. of Oral and Maxillofacial Pathology, School of Dentistry, Shahed University, Tehran, IRAN Tel: 0098-021-88959210 Fax: 0098-021-88967618 Email: noushin\_jly85@yahoo.com

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### Introduction

Anacyclus Pyrethrum (pellitory, Spanish chamomile) from Asteraceae family and Anacyclus genus is a native plant of India and Arabic countries and its root has therapeutic effects [1].

The root of Anacyclus Pyrethrum is fusiform with a hard and compact structure. It is 5 to 10 cm in length and dark, grayish brown, in color. It has a strange taste and causes saliva to flow [2].

Pyrethrine is the active substance of Anacyclus