

Republic of Iraq
Ministry of Higher Education
And Scientific Research
University of Baghdad
College of Dentistry



***Evaluation the Effect of Topical Application
of Curcumin Powder and Essential Oil on
Skin Wound Healing in Rabbits***

(Histological and Immunohistochemical Study on IGF-1R)

A Thesis

Submitted to the Council of the College of Dentistry at
the University of Baghdad, in Partial Fulfillment of the
Requirements for the Degree of Master of Science in
Oral Histology and Biology

By

Nidhal Hussein Muhammad

B.D.S.

Supervised by

Assist. Prof. Dr. Ban A.Jamil

B.D.S, M.Sc., Ph.D

Baghdad-Iraq

2014A.D.

1435A.H.

Abstract

Back ground: Herbal medicine can be called one of the branches of medicines in various forms .Turmeric curcumin has proved it's efficiencies a coloring, flavoring agent and has been traditionally used in medicine, exhibiting remarkable anti-inflammatory, and antioxidant properties. The varied biological properties of curcumin and lack of toxicity even when administered at higher doses makes it attractive to explore its use in various disorders like diseases of skin.It is good potential agent for wound healing.

Considerable interest has been focused on curcumin compound, mechanisms that drive wound repair are complex and have challenged wound-healing investigators for many years.

Aims of the study: To evaluate the effects of topical application of curcumin (powder and essential oil)on skin wound healing histologically and immunohistochemically.

Materials and methods :Sixty four New Zealand rabbits were used in this study, they were divided into four groups (16 animals for each healing period)each group was subdivided as follows:

-Experimental groups(8 rabbits)subdivided into:

a- Right facial side of(eight rabbits animal) for essential oil application
Left facial side of(eight rabbits animal)for curcumin powder application

-Control group (eight rabbits)(right facial sides used as control) .

Histological evaluation of wound healing was performed for all studied groups .Imunohistochemical analysis was utilized to localize and characterizethe IGF-R1 immuno positive cells at the wound site of all groups (experimental and control).

Results: Histological findings of the present study have shown that reepithelialization, wound contraction were accelerated after topical

application of curcumin and essential oil. The results of immunohistochemical examination of this study revealed that there was increased expression of IGF-1R by epithelial and connective tissue cells of skin especially with the topical application of curcumin oil at wound site.

Conclusion: - Essential oil is more effective in enhancement of wound healing regarding histological and immunohistochemical assessment revealed higher mean values of positive expression for insulin growth factor1receptor(IGF-1R) , (for both stromal and epidermal).