Original Paper

Effect of *Aloe vera* gel on TGF-β gene expression in incisional skin wound in BALB/c mice

Jafarzadeh H (M.Sc)[1], Arabi M (Ph.D)[2], Najafi N (M.Sc)*[1], Ahadi AM (Ph.D)[3]

[1]M.Sc in Animal Physiology, Department of Biology, Shahrekord University, Shahrekord, Iran. [2]Ph.D in Animal Physiology, Department of Biology, Shahrekord University, Shahrekord, Iran. [3]Ph.D in Genetic, Department of Genetic, Shahrekord University, Shahrekord, Iran.

Abstract

Background and Objective: *Aloe vera* (Aloe barbadensis M.) as a medicinal herb is practiced in wound healing. This study was carried out to assess the effect of *Aloe vera* gel (mucilage) on TGF-β gene expression in incisional skin wound in BALB/c mice**.**

Method: In this experimental study, 36 BALB/c male mice with weight range 22±2 gr were allocated equally into negative control (no wound), sham-operated (wound treated with physiological serum) and teratment (wound treated with *Aloe vera* gel). Two equal full-thickness skin wounds of 10±2mm were made on either side of the vertebral column in the sacral region. The animals in the teratment group were received daily, 2 gram of *Aloe vera* gel (without any bandage) as a thin layer for a period of 16 days. On 8th and 16th post wounding day, TGF-β gene expression in incisional wounds and Malonyldialdehyde (as end-product of lipid peroxidation) in serum samples was measured using RT-PCR and spectrophotometry methods, respectively.

Results: TGF-β gene expression in incisional skin wound increased in *Aloe vera* gel treated group in compared to negative control and sham-operated groups ($P<0.05$). Malonyldialdehyde concentration was significantly reduced in *Aloe vera* treated group in comparision with negative control and sham-operated groups.

Conclusion: *Aloe vera* gel can induce growth factor TGF-β gene expression and reducing the lipid peroxidation content can play an important role in incisional skin wound healing process.

Keywords: Skin, Incisional wound, *Aloe vera*, TGF-β gene, Malonyldialdehyde, Mouse

*** Corresponding Author: Najafi N (M.Sc), E-mail: na1365na@gmail.com**

Received 29 Jun 2013 **Revised** 15 Sep 2013 **Accepted** 22 Sep 2013

This paper should be cited as: Jafarzadeh H, Arabi M, Najafi N, Ahadi AM. [Effect of *Aloe vera* gel on TGF-β gene expression in incisional skin wound in BALB/c mice]. J Gorgan Uni Med Sci. 2014; 16(3): 16-23. [Article in Persian]