



Topical insulin and wound healing

Basavraj Nagoba¹, Sarita Mantri¹, Baban Adaonkar¹

Dear Editor;

We read with a great interest an article entitled, «the effect of topical insulin application on wound healing» by Suleyman et al. (1). This article addresses an important issue of wound healing by topical application of insulin. With regards to this article we would like to bring forward some of the important issues which we have noticed while going through this article.

In some earlier studies, insulin has been shown to enhance the extracellular matrix and collagen synthesis by increasing the proliferation of myofibroblasts during the stage of fibroplasia stimulating the action of macrophages and there by accelerates the process of wound healing (2, 3). Similar findings have also been observed by Suleyman et al. (1).

Suleyman et al. (1) in their article have studied the effect of topical application of insulin on wound healing on fresh cutaneous wounds (without involving subcutaneous tissue) artificially created under aseptic conditions by using cautery in rats. These wounds were without any signs of infections. They found the faster and better wound healing following the topical application of insulin. In this connection, we would like to add further that wound healing is a complex and dynamic process that occurs in timely and orderly fashion, if not obstructed by repeated trauma, ischemia and infection. Particularly infection is the most important cause for non-healing of wounds. Presence of infectious agent in the wound affects each and every process involved in wound healing making it a non-healing wound. Hence, it would be interesting to study the effect of

insulin on healing in infected wounds and chronic wounds to get more concrete and useful conclusions. Further the size of wound (10x4mm) was very small in their study. It would be more meaningful to study the effect of insulin on larger wounds with signs of infections.

It has also been stated by Suleyman et al. (1) that insulin displays its effect during the acute phase wound healing by enabling the removal of necrotic tissues in the wound bed and preventing bacterial contamination, however in many earlier studies, topical application of insulin to chronic wounds and diabetic foot wounds has been found to yield equally good results (4, 5).

One more important issue is absorption of insulin from wound and its effect on blood sugar level. Insulin is a most potent anti-diabetic agent known to reduce sugar level significantly. Hence, it is very essential to study the sugar levels and plasma insulin levels before and after the application of insulin to wounds.

Suleyman et al. (1) have also observed that the rate of wound healing was found to be higher in the topical insulin group than the normal saline group, however, the period of complete wound closing was shorter than the insulin group (abstract lines 6 & 7). These two statements appear to be contradictory. Also, no statistical tests have been applied at any stage of the study to prove the significance.

Conflict of Interest Statement - None to declare.

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<http://www.ejgm.org>

¹ MIMSR Medical College & Yashwantrao Chavan Rural Hospital, Latur, India

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Correspondence: Dr. B. S. Nagoba Assistant Dean (Research & Development), Maharashtra Institute of Medical Sciences & Research, Latur-413 531, M.S., India. Mob. +919423075786/ +917588237531, Phone: +912382227587

E-mail: dr_bsnagoba@yahoo.com, bsnagoba@gmail.com