



## **Amazing Topical Protocol and Novel Powder Dressing Combination Formula in Treatment of Diabetic Foot Wounds**

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### **Dear Editor in Chief**

Poorly controlled diabetes mellitus would be harmful. Where abnormally high blood glucose level results in some serious complications such as diabetic wounds (1). The main concern with diabetic wounds is poor or delayed healing caused by peripheral arterial disease and peripheral neuropathy (2). In diabetic patient damage of blood vessels and impairment of immune system make ulcers difficult to heal bacterial infection, where its development leads to gangrene and ultimately amputation (3, 4). Therefore the main goal of treatment must be focused on decrease severity of this deranged process and heal diabetic wounds as soon as possible along with lower cost.

In this research five methods: 1- ulcer cleansing by solution of ethacridine lactate (0.1%) and combination of metronidazole with normal saline (0.2%) 2- magnet therapy 3- power LED blue light therapy 4- powder dressing combination formula 5- usage of dexpanthenol (5%) and zinc oxide (20%) ointment plus horsetail in base of ucerin, were combined and studied by clinical trial and treatment trial.

In the first step, ethacridine lactate (0.1%) had a positive inhibitory effect on wound exudate without any recorded contraindication (5). Also applying mixture of metronidazole (0.2%) and normal saline (2gr/l) on wounds was helpful in controlling odor and killing anaerobic bacteria (5). In the second step, magnet was applied just above wound area with intensity of 1000 to 2000 gauss

(0.2 tesla) for at least 8 weeks. The net result of magnetic field enhances electron transfer which is the basis of every chemical reaction in body, also increase molecular activity and improve body function (6). In the next step the area of wound and infected region was exposed to power LED blue light therapy with the wavelength of 470 nm and intensity of 50-200  $\text{mw}/\text{cm}^2$ . Duration of treatment was 8 weeks and 3 times per week, on a regular basis about 15 minutes each session. Power LED blue light therapy enhances wound healing by killing bacteria, improving blood circulation and restore damaged tissue (7). In the fourth step powder combination of ethacridine lactate (0.1%), zinc oxide, oak fruit and ginkgo biloba was used. This novel powder dressing is very effective in healing of diabetic wound, and in this study was sprinkled on wound two times every day (BiD). In last step dexpanthenol (5%) and zinc oxide (20%) ointment plus horsetail and ginkgo biloba powder in ucerin was used on area of wound. Dexpanthenol (vitamin  $B_5$ ) is a component of coenzyme A and because of its anti-inflammatory effect is used in this process (8, 9). When the wound began to recover (the wound shape began to change without any exudate) this ointment combination was used on whole surface of wound. Therefore the healing process was continued and ultimately improvement was completed (10).

These five steps were designed to get an effective therapeutic result, which are closely linked and synergistic of each other. After applying proposed treatment protocol mean of wound area in diabetic patients sample was decreased about 6.2 cm<sup>2</sup> in a shorter time. In this study the proposed topical protocol and a novel powder dressing formula were used which significantly is simple, effective and cost effective in contrast with available treatments. Also time of healing and granulation tissue formation along with wound closure is considerable which this remedy seems to be necessitous and inevitable.

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