

Natural Remedies Effective for the Healing of Diabetic Wounds

Ali Saeedi-Boroujeni^{1,2*}

¹Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran; ²Department of Immunology, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

Diabetes mellitus is one of the major metabolic disorders that is associated with high blood glucose caused by the inability of the body to use glucose (1). Studies have shown that about 5% of the world's population is affected by diabetes. Diabetes is associated with severe complications such as diabetic ulcers, neuropathy, nephropathy, and retinopathy. Diabetes is a common and debilitating disease in humans that can cause serious problems for the organs. One of these problems is chronic and resilient wounds that are commonly found on the feet of these patients. This complication is also called diabetic foot (2). Although different treatments are currently used to treat wound healing, no effective and low side effects treatment has been found. Medicinal plants are now used to treat diseases (3-6), especially diabetic wounds (7). Effectiveness of drugs, supplements and substances are identified during drug studies (8). Certain natural and herbal medicines are used to repair wounds in diabetics that Trigonella foenum-graecum, Aloe vera, Rubus fruticosus, Vitis Vinifera, Prosopis farcta, Ferula assa-foetida, Cinnamomum zeylanicum, Melilotus officinalis, Melilotus officinalis are the most important cases. These plants can improve diabetic wounds by reducing blood glucose levels, stimulating collagen production, faster contractions of the wound and angiogenesis. High blood glucose leads to an abnormality of the inflammatory stage, preventing cell proliferation, high levels of matrix metalloproteinases, and an increase in inflammatory cytokines (9,10). This process can be affected by herbal ingredients and improve the healing of diabetic wounds.

REFERENCES

- 1. Xue WL, Li XS, Zhang J, Liu YH, Wang ZL, Zhang RJ. Effect of Trigonella foenum-graecum (fenugreek) extract on blood glucose, blood lipid and hemorheological properties in streptozotocin-induced diabetic rats. Asian Pacific Journal of Clinical Nutrrition. 2007; 16(1): 422-426.
- Gabir MM, Hanson RL, Dabelea D, Imperatore G, Roumain, J, Bennett PH, et al. Plasma glucose and prediction of microvascular disease and mortality: evaluation of 1997 American Diabetes Association and 1999 World Health Organization criteria for diagnosis of diabetes. Diabetes Care. 2000; 23(8): 1113-1118.
- 3. Ilkhanizadeh B, Mehrshad A, Seddighnia A, Zarei L. Comparison between effects of free and niosomal formulations of Artemisia annua L. (asteraceae) on chronic myelogenous leukemia (K562) cell line. International Journal of Pharmacology. 2017; 13 (2). pp. 191-197.
- 4. Jivad N, Bahmani M, Asadi-Samani M. A review of the most important medicinal plants effective on wound healing on ethnobotany evidence of Iran. Der Pharmacia Lettre. 2016;8(2):353-7.
- 5. Bahmani M, Shirzad H, Mirhosseini M, Mesripour A, Rafieian-Kopaei M. A review on ethnobotanical and therapeutic uses of fenugreek (Trigonella foenum-graceum L). Journal of evidence-based complementary & alternative medicine. 2016;21(1):53-62.
- 6. Mohsenzadeh A, Ahmadipour S, Ahmadipour S, Asadi-Samani M. A review of the most important medicinal plants effective on cough in children and adults. Der Pharmacia Lettre. 2016;8(1):90-6.
- Naji S, Zarei L, Pourjabali M, Mohammadi R. The Extract of Lycium depressum Stocks Enhances Wound Healing in Streptozotocin-Induced Diabetic Rats. Int J Low Extrem Wounds. 2017;16(2):85-93.
- Zarghani SS, Soraya H, Zarei L, Alizadeh M. Comparison of three different diet-induced non alcoholic fatty liver disease protocols in rats: A pilot study. Pharm Sci. 2016; 22(1):9-15.
- Komesu MC, Tanga MB, Buttros KR, Nakao C. Effects of acute diabetes on rat cutaneous wound healing. Pathophysiology. 2004; 11: 63-7.
 Lobmann R, Ambrosch A, Schultz G, Waldmann K, Schiweck S, Lehner H. Expression of matrix-metalloproteinases and their inhibitors in the
- wounds of diabetic and non-diabetic patients. Diabetologia. 2002; 45: 1011-6.