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Educational Qualification: M. Pharmacy (Industrial Pharmacy)

Year of Registration: 2018

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Research Abstract

India is slowly progressing to the top of the world with the largest volume of diabetic subjects and is being anticipated to be the “diabetes capital of the world”. India will be the capital of diabetics by 2025. Patient education, blood sugar control, wound debridement, advanced dressing, offloading, surgery and advanced therapies are still the standard care therapies for treating Diabetic wounds. However, none of these treatment strategies address all the prerequisites necessary to treat Diabetic wounds because of its multifactorial pathophysiology and the cost associated with these treatments are very high. Hence, development of a single treatment strategy (multi-mechanism-based products) to plug all the loopholes may have potential beneficial effects in treating this chronic wound. Recent reports suggest that although the pathogenesis of diabetic wound healing is multifactorial, decreased expression of growth factors, rapid matrix degradation due to increased levels of inflammatory cytokines and chronic infections are major causes of impaired wound healing of diabetic wounds. This altered molecular environment of diabetic wound develops a proinflammatory state that may cause wounds which fail to heal. Local treatment with inflammatory mediators and antibacterial can restore cutaneous homeostasis and have better wound healing. Hence, in this project it is proposed to formulate a dual drug (Resveratrol and Doxycycline Hyclate)-loaded biomimetic collagen–chitosan composite nanohybrid scaffolds which have both anti-inflammatory and antibacterial activities for potential tissue regeneration in diabetic wounds.

Fellowships: ICMR-SRF

Way Forward: A post-doctoral position which supports my research work.