

Chitosan/PVA/Doxycycline film and nanofiber accelerate diabetic wound healing in a Rat model



Keshvad Hedayatyanfard, PhD
Department of Pharmacology, School of Medicine,
Shahid Beheshti University of Medical Sciences, Iran

Abstract

In this study we evaluated the effects of nanofiber and film polymers with doxycycline for treating wound in a diabetic rat model. 108 male rats were divided into six groups, the control group, the diabetic control, and the groups were diabetic rats receiving different wound dressing. At the 3rd, 7th, and 14th days, macroscopic/histologic imaging and tissue sampling was performed. Tissues were analyzed for IL-1 β , TNF- α , IL-10, TIMP-1, and MMP-2 by using ELISA. Dressings of chitosan, PVA and doxycycline increased the rate of wound closure, the volume of collagen, dermal, and epidermis; in addition it increased the number of fibroblasts and basal cell epidermis cells, vascular length, and decreased the number of neutrophil cells. Inflammatory cytokines and MMP-2 were decreased, and anti-inflammatory IL-10 and TIMP-1 were increased. It was ultimately attained that the combination of chitosan/PVA/doxycycline could be a useful dressing for the healing of diabetic wounds.

<https://dermatology.conferenceseries.com/europe/abstract/2020/chitosan-pva-doxycycline-film-and-nanofiber-accelerate-diabetic-wound-healing-in-a-rat-model>

Biography

Keshvad Hedayatyanfard has completed his PhD from Shahid Beheshti University of Medical Sciences. His research interest is focused on the acute and chronic wound healing, hypertrophic scar/keloid, and autoimmune disease management. He also was nominated as the holder of TOP invention certificate at inventions festival of Iran's national elite's foundation (2015, 2016). Currently, he works in Alborz University of Medical Sciences.

[20th European Dermatology Congress](#)

April 29-30, 2020 Prague, Czech Republic

Abstract Citation:

Chitosan/PVA/Doxycycline film and nanofiber accelerate diabetic wound healing in a Rat model, Euro Dermatology 2020, 20th European Dermatology Congress, April 29-30, 2020 Prague, Czech Republic