JETOX - BIOFILM DEBRIDEMENT WITH PRONTOSAN SOLUTION AND OXYGEN

Department of Dermatology and Plastic Surgery, Clalit Health Services , Beer-Sheva, Israel

Vigoda I.D1, MD, , Elyakim D., RN, MA

Aim:

The aim of this study was to test the efficacy of Jetox – Biofilm Debridement with Prontosan solution and oxygen for removal of biofilms and improvement of the wound healing process.

Background:

One of the simplest, most efficient methods of achieving a clean, fast healing wound involves the "Jetox system" cleansing and hydro – debridement. An obvious marker of chronic wound persistent inflammation is the presence of fibrin and necrotic tissue, which can be both a focus of Biofilms (Bacteria) and present a barrier to healing, Debridement occurs naturally within wounds, and studies indicate that if this process is accelerated, then healing will be more rapid. Adding to

the system compressed oxygen combined with a minimal amount (1.5ml/min), wound healing will accelerate.

Oxygen delivery is a crucial element involved in wound healing and it is widely recognized that limited oxygenation can lead to a chronic non-healing ulcer(1)(2). Oxygen and its reactive derivative, hydrogen peroxide are known to induce angiogenic responses, such as vascular endothelial growth factor (VEGF) expression, and attribute to the acceleration of vessel growth.[5] It has also been observed that oxygen triggers differentiation of fibroblasts to myofibroblasts, which are the cells responsible for wound contraction.(2)

The Prontosan Solution cleanses, moisturizes and decontaminates acute and chronic wounds, thus aiding in efficient wound bed preparation. To reach this end, the Prontosan Solution contains Polyhexanide - a powerful antimicrobial agent as well as Betaine, a gentle effective surfactant to penetrate, clean and remove wound debrides and biofilms.

Method:

Setting:

This study took place in the Chronic Outpatient Wound Clinic at the Department of Dermatology and Plastic and Reconstructive Surgery in Clalit Health Services in Beer Sheva and Ashkelon, Israel.

Participants

The case study series included 25 patients, ranging in age from 60 to 80 years. All patients exhibited venous and diabetic chronic wounds. Wounds were characterized by slow healing and disturbances in the physiological and pathological wound healing process that did not respond to traditional wound dressings.

Intervention:

Subsequent to evaluation and diagnosis of venous and diabetic ulcers, each patient signed an informed consent and then underwent bedside hydraulic debridement using compressed oxygen combined with Prontosan solution, and at home topical Prontosan for 20 minutes before the local treatment planning for each Patient followed by a weekly wound status review and treatment.

Results / Discussion:

From the 25 participants, 20 achieved complete wound cleaning and hydraulic debridement and achieved excellent granulation tissue. Three wounds closed within six weeks and two patients with active infection were treated with antibiotics.

Conclusions:

This simple and low-cost system for wound irrigation, cleansing and debridement is one of the most efficient and effective methods of achieving clean, fast wound healing. Revolutionary for its thorough, painless cleansing complemented by utilization of compressed oxygen combined with Prontosan solution, the method achieved good debridement, removal of Biofilms and improvement of the wound healing process.

Case 1

Jetox-ND Wound Cleasing System by Deroyal

- One of the simplest, most efficient methods of achieving a clean, fast healing wound
- Initiates thorough cleansing using compressed air/oxygen combined with a minimal amount (1.5ml/min) of standard sterile solution
- Quickly and efficiently cleans and debrides wounds without the mess and encumbrance of traditional systems

- Administers a cool, gentle jet stream that creates a desensitizing effect for the patient
- The treatment of choice for patients sensitive to other forms of debridement
- Uses standard connectors for portable and wall gas outlets and saline dispensers, does not require a vacuum system, generator or gun
- Ideal for bedside application in hospital, clinic or home settings
- Completely disposable, with virtually no cleanup of the work environment
- Easy set-up, lightweight and portable

1) Wound Repair Regen. 2017 Aug;25(4):591-608. doi: 10.1111/wrr.12561. Epub 2017 Aug 7

Oxygen therapies and their effects on wound healing.

de Smet GHJ[1], Kroese LF[1], Menon AG[1,2], Jeekel J[3], van Pelt AWJ[4], Kleinrensink GJ[2], Lange JF[1,2].

2)Wounds, 2014;26(5):E39-E47.

Topical Oxygen and Hyperbaric Oxygen Therapy Use and Healing Rates in Diabetic Foot Ulcers; Brittary Wnfeld, DPM, CWS