Adtec SteriPlas treatment of Chronic Wounds

Bacterial colonization of chronic wounds slows healing. Adtec plasma has been shown in vitro to kill a wide range of pathogenic bacteria.

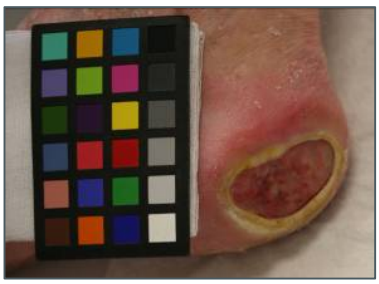
Chronic ulcers of the lower leg, with a prevalence of approximately 1% of the population of developed countries, are associated with considerable patient morbidity and account for an estimated 1–2% of the annual healthcare budget in European countries. Bacterial colonization of such wounds is common and is a well-recognized factor contributing to impaired wound healing

Objectives

To examine the safety and efficiency of cold atmospheric argon plasma to decrease bacterial load as a new medical treatment for chronic wounds.

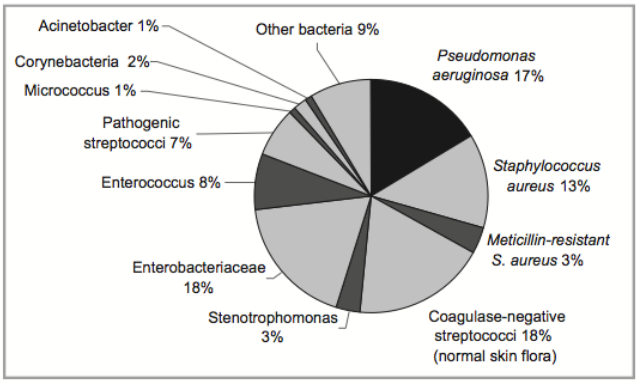
Study Outline

Thirty-eight chronic infected wounds in 36 patients were treated in a prospective randomized controlled phase II study with 5 min daily cold atmospheric argon plasma in addition to standard wound care. The patient acted as his or her own control. Bacterial species were detected by standard bacterial swabs and semi-quantitative changes by nitrocellulose filters.

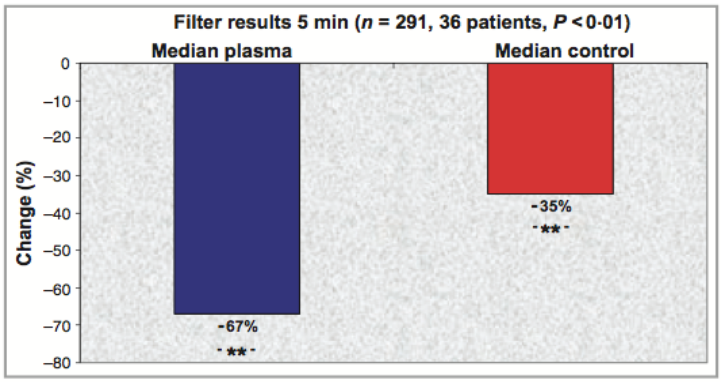


Results

Analysis of 291 treatments in 38 wounds found a highly significant (34%, $P<10^{-6}$) reduction of bacterial load in treated wounds, regardless of the type of bacteria. No side-effects occurred and the treatment was well tolerated.



Types of bacteria detected on wounds



Highly significant reduction in bacterial count (~34%, P<106) in plasma-treated area (blue bar) compared with standard wound care alone (red bar).

Conclusions

Cold atmospheric argon plasma treatment is potentially a safe and painless new technique to decrease bacterial load of chronic wounds and promote healing.

Full Study Details can be obtained from the following paper:
A first prospective randomized controlled trial to decrease bacterial load using cold atmospheric argon plasma on chronic wounds in patients, G. Isbary, G. E. Morfill, H.-U. Schmidt, M. Georgi, K. Ramrath, J. Heinlin, S. Karrer, M. Landthaler, T. Shimizu, B. Steffes, W. Bunk, R. Monetti, J. L. Zimmermann, R. Pompl and W. Stolz, British J. Dermatol. 163 (1), 78-82 (2010).