





Shockwaves and active dressings in the management of biofilm: preliminary results


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INTRODUCTION - The interactions between the skin microbiota and the multiple cell types involved in wound healing regulate the immune response and promote the restoration of the protective skin barrier. In chronic lesions this interaction is deregulated. With this work we want to demonstrate the ability of Extracorporeal ShockWaves Therapy (ESWT), to restore the correct interaction between microbiota and skin lesions, actively contributing to the demolition of the biofilm, if combined with interactive dressings.

METHODS - The study is still ongoing. We have currently treated with ESWT* 10 patients with biofilmed chronic wounds (certified by specific test for detection of metalloproteases - MMPs); the final target will be 15 patients, divided into 3 groups with this protocol: Group A, ESWT and advanced dressings; Group B, ESWT and Topical AminoAcids in cream formulation ** and moist gauzes; Group C, ESWT and Stable Ozonides in spray and impregnated gauzes formulations ***. The treatment lasts 4 weeks and includes 2 treatments/dressings per week. The Wound Area Reduction (WAR) and the presence/absence of biofilm, by repeating specific test, are evaluated.

*dermaPACE - SANUWAVE Health, Inc. (Suwanee, GA - USA) **Vulnamin Cream - Professional Dietetics S.p.A. (Milan, Italy) ***Rigenoma Spray & Gauzes - Erbagil s.r.l. (Santa Lucia BN, Italy)

RESULTS - All the lesions had good area reduction and clinical improvement, but 4 out of 10 (40%) still showed the presence of biofilm (positivity to MMPs test). The most significant data is that all cases of positivity to MMPs belong to Group A, while all cases of the groups that used interactive treatments (AminoAcids and Ozonides) were negative. Wound Area Reduction was also more evident in groups B and C: Group A 61.4%, Group B 80.6% and Group C 82.3%.

	 ESWT + Advanced Dressings (4 patients)	 ESWT + Topical Amino Acids (3 patients)	 ESWT + Stable Ozonides (3 patients)
MMPs +	4 (100%)	-----	-----
MMPs -	-----	3 (100%)	3 (100%)
mean WAR	- 61.4%	- 80.6%	- 82.3%



Sacral pressure injury in 95 y.o. female (ESWT+AminoAcids)

1 - Beginning
2 - 2 weeks later
3 - End (4 weeks)



Pressure injury of the heel in 79 y.o. female (ESWT+Stable Ozonides)

DISCUSSION - This data is highlighting that technology can effectively remove the biofilm and that interactive dressings such as Topical AminoAcids and Ozonides contribute significantly to improving the results obtained, thus reducing time and costs..

References:
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