Healing of post-operative diabetic foot ulcers of neuroischemic component through the control of oxidative stress: series of cases.

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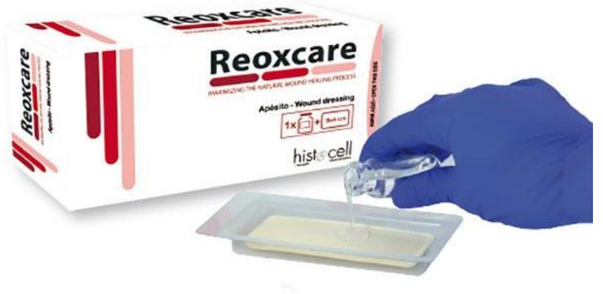
Introduction and objectives:

The control of oxidative stress in wounds is being considered in recent years as a key aspect to achieve activation of hard-to-heal wounds[(1)]. It has been demonstrated that diabetic patients present a significant increase in oxidative stress, which is even higher in those patients with diabetic foot ulcers. This entails the maintenance of the inflammatory situation and therefore the chronification of the ulcer[(2)]. With the aim of improving this situation, the effectiveness of an antioxidant wound dressing[(3,4)] was determined in 5 patients with post-operative diabetic foot ulcers of neuroischemic component, after an amputation process, with the purpose of closure by "second intention".

Material and methods:

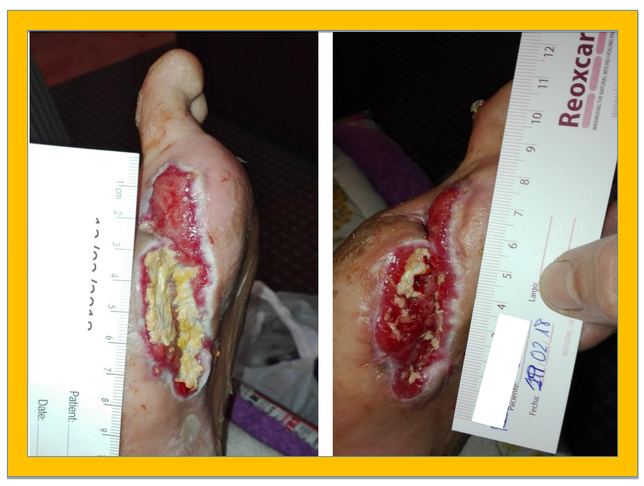
The antioxidant wound dressing was placed directly in the wound bed in the presence of devitalized tissues (fibrin and slough). Hydrofibre foam with silicone borders was used as a secondary wound dressing and was changed twice a week.

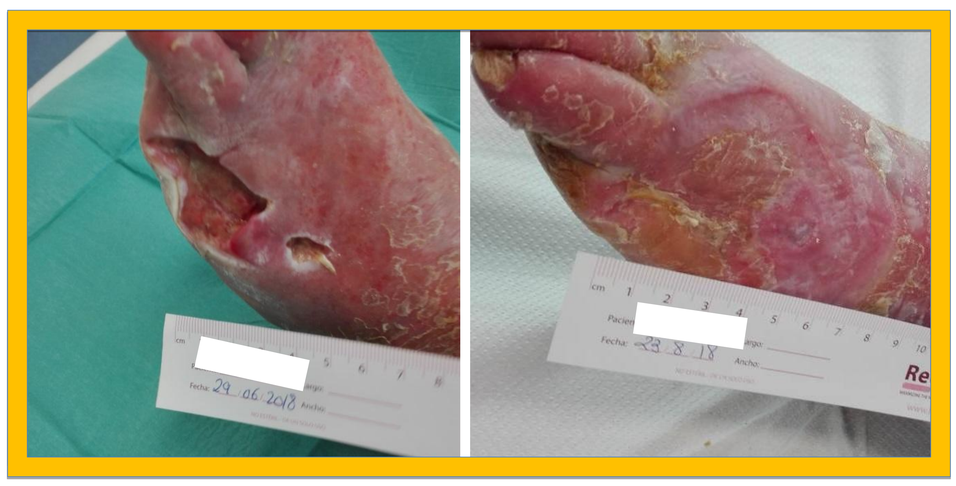


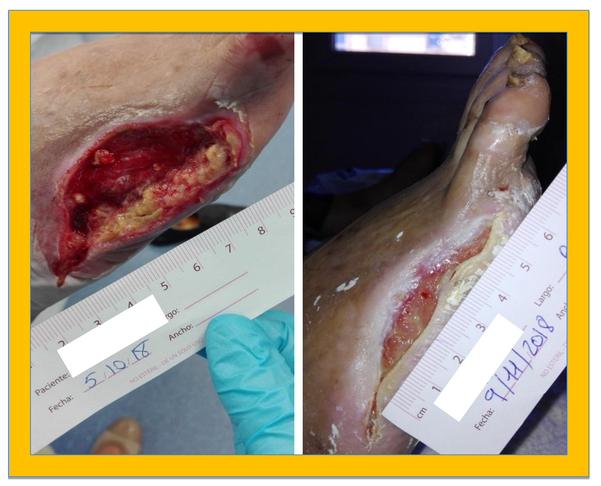
Results:

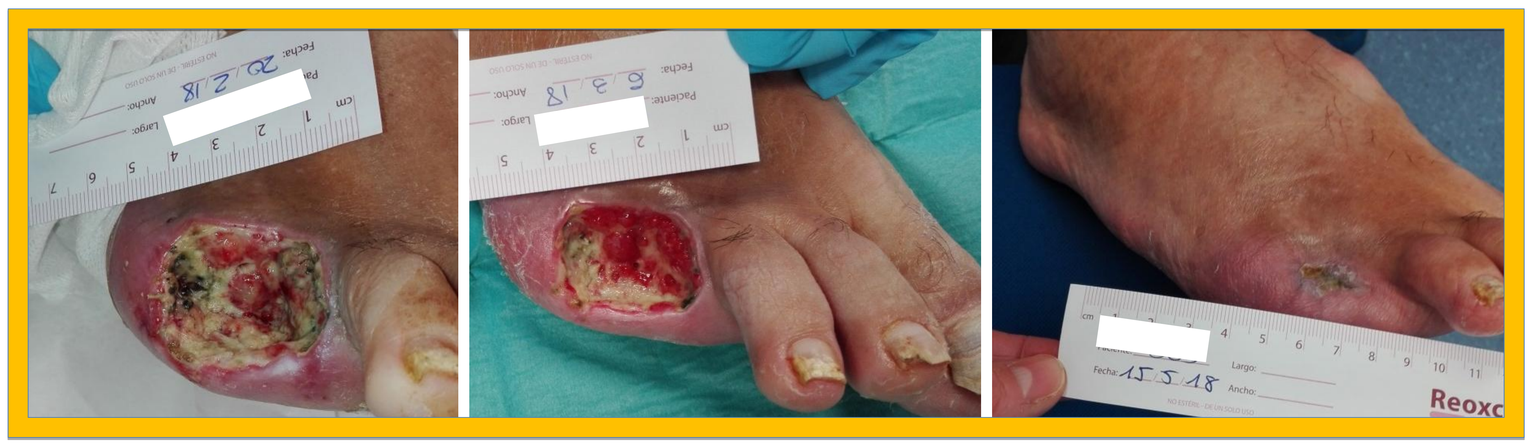
Demographics: 4 Men and 1 Woman
Age: 43-75 Years
Time in evolution: 10-36 Days
Location: 4th and 5th fingers amputation
Treatment duration: 14-59 days
Healing achieved: 4 (80%)
Complications: 1 (20%) (not related to the wound dressing)

Size	Probe to bone	Exudate	Pain	Erythema	Maceration	% granulation	Previous treatment
9,5x3,5	POSITIVO	2 (0-3)	2 (0-3)	0 (0-3)	0 (0-3)	50%	TPNT
3,6x3,1 v4	NEGATIVO	2 (0-3)	1 (0-3)	0 (0-3)	0 (0-3)	20%	CAH
4x2,5 v4	NEGATIVO	2 (0-3)	0 (0-3)	0 (0-3)	1 (0-3)	20%	TPNT
7,5x3,1	POSITIVO	2 (0-3)	0 (0-3)	0 (0-3)	3 (0-3)	50%	TPNT
7,5x2,6	POSITIVO	2 (0-3)	0 (0-3)	2 (0-3)	0 (0-3)	50%	TPNT









Conclusions:

The antioxidant treatment achieved the elimination of non-viable tissues, the maintenance of an appropriate wound bed, the induction of new granulation tissue and the progress of re-epithelialization.

In addition, the wound dressing adapted very well to all wounds and had a satisfactory reception by patients.

Bibliography:
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(3) Castro B., palomares T., Azcoitia I., Bastida F., del Olmo M., Soldevilla J., Alonso-Varona A. Development and preclinical evaluation of a new galactomannan-based dressing with antioxidant properties for wound healing. Histol Histopathol 2015;30: 1499-1512.
(4) Castro B., Bastida F., Segovia T., López Casanova P., Soldevilla J., Verdú-Soriano J. The Use Of An Antioxidant Dressing On Hard-To-Heal Wounds: A Multicentre, Prospective Case Series. Journal Of Wound Care 2017; (26) No12: 742-750.