

# International Speaker

Cassino Roberto

Topic: HYALURONIC ACID and AMINO-ACIDS: clinical efficacy in wound management

15 years ago, scientific research by an Italian Company, leader in the field of tissue regeneration, showed us the potential of the combination of hyaluronic acid and amino acids, having verified the rapid absorption through the wound bed. This review of the literature aims to demonstrate the versatility and effectiveness of hyaluronic acid and amino acids in all its formulations and, above all, to demonstrate that amino acids bring real added value in wound healing.

Materials and methods:

we analyzed the data produced and published in the last 15 years on the use in every type of wound and of the various formulations of hyaluronic acid + amino acids (HA + AA), then comparing the results obtained with those of hyaluronic acid alone (HA). then carried out a study directly comparing HA alone versus HA + AA, this study is currently being published.

Results:

In each type of wound we obtained extremely positive results, both in the activity of debridement and cleansing, and in the stimulation of granulation and also epithelialization. In the treatment of clean wounds, using HA + AA powder and / or cream, epithelialization occurred 25% faster than the treatment with HA alone, while the filling time of deep wounds is reduced by 35% compared to HA and 20 % compared to advanced dressings; in case of necrotic lesions, it is not possible to compare HA + AA gel with products based on HA alone (as HA is not indicated for debridement), but comparison can be done towards other hydrogels: debridement takes place with the same rapidity, but there is a concomitant important area reduction that is not detected with the common hydrogels, with a consequent significant reduction in healing times; in case of first-degree pressure injuries, or high-risk patients, the HA + AA formulation in gel spray provides a remarkable prevention, increasing the local oxygenation and improving the cutaneous trophism of the treated area.

Conclusions / Discussion:

the various formulations of HA + AA have shown great efficacy in every type of wound treated and, therefore, also extreme versatility, due to the fact it is able to manage necrotic wounds as well as cleaning deep wounds, cleaning superficial wounds and first-degree pressure injuries, as well as preventing their occurrence. Diabetic Foot deserves a separate mention, after revascularization, it shows significant results, including a faster rate of healing compared to other types of lesions. As far as the HA + AA vs HA comparison study that is about to be published, we have highlighted an area reduction of greater than 30% HA + AA versus HA alone which unequivocally demonstrates that amino acids represent a real added value in the treatment of skin lesions.

# Hyaluronic acid and amino acids: clinical efficacy in wound management

**Prof. Roberto Cassino**

The link between protein availability and tissue repair has been known for years. Proteins are essential for achieving healing of skin lesions because they are responsible for the fibroplastic-proliferative phase. Since our body needs protein support to reconstruct the loss of tissue in chronic skin lesions, it was thought it would be possible to provide the basic elements directly to the lesion itself. A mixture of hyaluronic acid and amino acids has been studied as a dressing, to treat chronic skin lesions of various etiologies (excluding infected wounds), and very significant results have been achieved in terms of effectiveness and comfort with no reported adverse events. It follows that the wound bed has to be considered a real exchange surface, therefore able to be used as a nourishing pathway for the lesion, so as to bring a considerable amount of material with a plastic function to the wound.

With 15 years of clinical experience and investigation, faster healing compared to the standard treatment has been demonstrated, with more than double the number of wounds completely healed in 70 days (61% vs 27% with standard treatment alone)<sup>1</sup> and 93% of wounds completely healed within 3 months<sup>2</sup>. Effectiveness of Vulnamin in powder, cream, spray and gel formulations, was seen in all types of wounds (diabetic foot, bedsores, venous and arterial ulcers, vasculitis, rheumatic ulcers and in connective tissue disorders). In addition to the remarkable effectiveness in terms of healing rate and induction of granulation tissue production, a significant improvement in quality of the scar was found. The scar appears to be constituted trophic tissue that is well hydrated and elastic and does not have the characteristics of typical rigid and fibrotic scar tissue.

The gel formulation also deserves a separate mention as it has been shown to not only debride wounds as successfully as inert hydrogels (see Fig. 1 and Fig 2), but also promote faster granulation and reduction in wound area, resulting in a considerable decrease in healing time<sup>2</sup>.

The spray formulation, on the other hand, is particularly effective in prevention and

treatment of first-degree pressure lesions, i.e. the pre-ulcerative phase of the pressure sores; the application of Vulnamin spray is particularly effective in these cases, especially in terms of skin trophism.



Fig. 1 Necrotic wound with tendon exposure in arteriopathic diabetic foot. Start of treatment



Fig. 2 Preceding case showing full debridement within 2 weeks

## References

1. Maggio G. et al. A new protocol for the treatment of the chronic venous ulcers of the lower limb. *Clinical and Experimental Medicine*, Vol 12, N. 1, 2012:55-60
2. Abbruzzese L. Effectiveness and Safety of a Novel Dressing in the Management of Neuropathic Leg Ulcers in Diabetic Patients: A Prospective Double-Blind Randomized Trial. *The International Journal of Lower Extremity Wounds*, 2009, 8(3), p134-140