

# Case Study: Nutritional Supplements Support Limb Salvage from Chronic Leg Ulcer Due to Pyoderma Gangrenosum

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## BACKGROUND AND AIM

A 5-10 day perioperative protocol of very high protein immunonutrition (HPIM) containing supplemental L-arginine, n-3 fatty acids and dietary nucleotides has been repeatedly demonstrated to help reduce infection and length of stay after major elective surgery.<sup>1,2</sup>

Further, guidelines advise use of specialized nutrition to provide increased amounts of calories, protein, L-arginine, zinc and other antioxidants to malnourished or at-risk adults with full thickness pressure injury.<sup>3</sup>

Since little is known about HPIM in chronic wounds, we evaluated a 30-day course of HPIM in a malnourished adult with a full thickness chronic leg ulcer requiring limb salvage surgery.

**Aim:** Observe feasibility of extended use HPIM contributing to chronic wound management and limb salvage.

## CASE DESCRIPTION

- A 57-year-old white male had a 4-month history of a worsening right lower leg (RLL) ulcer, initiated by minor trauma, but 34 cm in size on his first visit, with extensive exposure of tendon. (**Figure 1**)
- Biopsy confirmed pyoderma gangrenosum; treated with high dose oral prednisone (60 mg daily), and surgery planned.
- Physical exam identified muscle wasting and patient reported a 15% weight loss of usual body weight in the past month. A Mini-Nutritional Assessment (MNA<sup>®</sup>) score of 7 also indicated presence of malnutrition. (**Figure 2**)

## NUTRITION INTERVENTION

- Wound physician and staff educated the patient on the importance of increasing protein and L-arginine intake with HPIM.
- A taste test was used to gain patient commitment to consume 2 cartons/day for 30 days (400 calories, 36grams of protein and 8.4 g L-arginine daily).
- Patient was provided with a 1-month supply of oral HPIM (IMPACT Advanced Recovery<sup>®</sup>) samples, a record keeper, flavoring tips and a list of high protein foods to support dietary counseling.
- After HPIM samples were exhausted, patient utilized standard oral nutritional supplements for additional calories and protein for 3 weeks prior to surgery.



Figure 1. RLL ulcer



Figure 2. Muscle wasting

## RESULTS

- Sustained compliance with HPIM was confirmed at follow-up visits.
- Within one week of starting HPIM, the wound demonstrated increased granulation tissue (**Figure 3**), and within one month patient had gained 14 pounds.
- Tendon removal and successful surgical skin graft closure took place after approximately two months of nutrition intervention with healing by primary intention. (**Figures 4 & 5**)



Figure 3. Tissue granulating



Figure 4. RLL, s/p salvage surgery

## CONCLUSION

- Despite the use of high dose steroids and pre-existing malnutrition, a motivated patient and wound team committed to nutritional intervention achieved successful limb salvage surgery including a skin graft.
- In-clinic taste test, record keeping and removing barriers such as cost facilitated the success of the HPIM component of the nutrition intervention.



Figure 5. RLL, healed

