

Effect of Oral Nutritional Supplementation on Wound Healing in Diabetic Foot Ulcers: A Prospective Randomized Controlled Trial

Armstrong DG, Hanft JR, Smith APS, et al., *Diabetic Medicine* 2014;31:1069-1077.

People with diabetes have an increased risk of foot ulcers and demonstrated difficulty in wound healing.

Nutrition plays an important role in wound healing, and supplementation with arginine, glutamine and β -hydroxy- β -methylbutyrate (HMB) can enhance wound collagen formation for wound healing.¹

This multicenter study utilized a double blind, randomized, controlled design to compare outcomes in 270 patients with at least one Stage 1A neuropathic diabetic foot ulcer. Study subjects received a nutritional supplement containing arginine, glutamine and HMB (Juven[®]) twice a day for 16 weeks, versus a calorically similar, low glycemic control drink. Total wound closure and time to complete healing were the primary outcome variables.

Results

Results demonstrated that the use of Juven was well-tolerated in these patients. While a numerically larger percentage of subjects that consumed Juven had complete healing at 16 weeks (49.6 vs 46.1%, intent-to-treat analysis), and a faster median time to complete healing (105 vs 91 days) the results in neither case were statistically significant.

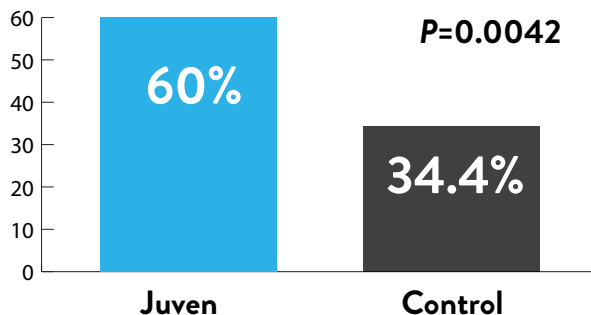
CLINICAL SUMMARY

However, *post hoc* analyses demonstrated that in patients with lower baseline levels of serum albumin and/or reduced ankle brachial pressure index (ABI, indicative of reduced lower limb blood flow), Juven positively affected healing rates:

- In people with baseline albumin ≤ 4.0 g/dL a statistically greater proportion of the Juven group (n=61) achieved total wound healing vs. controls (n=66), 50.8% vs. 34.9%, respectively (p=0.0325).
- Similarly, in the Juven group (n=58), total wound closure rates in patients with reduced ABI were statistically higher than in the control group (n=61), 60.3% vs. 39.3% (p=0.0079).
- In people who had both reduced albumin and ABI, a significantly greater proportion achieved wound healing with Juven (n=30), 60.0%, than with the control drink (n=32), 34.4% (p=0.0042).

Percent of Subjects with Wound Closure

Subset with Albumin ≤ 4.0 g/dL and ABI < 1.0



NUTRITION CONCLUSION

The addition of Juven as an adjunct to standard of care significantly improved wound healing of stage 1A diabetic foot ulcers in persons with a serum albumin level ≤ 4.0 and/or an Ankle Brachial Index of ≤ 1.0 .

REFERENCE:

1. Williams JZ, Abumrad N, and Barbul A. Effect of a specialized amino acid mixture on human collagen deposition. *Annals of Surgery*, 2002;236(3):369-375.