



# Reduction in Tibial Shaft Fracture Healing Time With Essential Nutrient Supplementation Containing Ascorbic Acid, Lysine, and Proline

Jitendra Jamdar, M.B.B.S., M.S. Bala Rao, B.A.M.S., Shrirang Netke Ph.D., M. Waheed Roomi, Ph.D., Vadim Ivanov, M.D., Aleksandra Niedzwiecki, Ph.D., Matthias Rath, M.D.

The healing of bone fractures is a prolonged process that can be affected by nutrition. Our objective was to critically evaluate the effect of a specific nutrient synergy program on the healing time of tibial fractures. The tested nutrient program has been shown to support the formation of collagen in the bones, the foundation of bone mineralization. The stability of the bones is dependent upon the stability and strength of the underlying connective tissue.

## **Study Design**

A double-blind placebo-controlled study was conducted on 113 patients who presented with unilateral displaced closed or Grade I open tibial fractures to Dr. Jamdar Hospital in Jabalpur, India. Patients were randomized to receive either standard care with a placebo or supplementation with an essential nutrient synergy program. Qualifying patients, on admission to the study, were clinically examined, radiographs of the affected limbs were taken, fractures reduced under anesthesia, and above knee plaster casts were applied. Radiographs were taken at each follow-up visit to confirm the reduced alignment of fracture and proper callus formation.

Healing was defined as the absence of abnormal mobility at the fracture site clinically, the absence of pain elicited by stressing the fracture or by walking, and radiographic confirmation of callus formation.

## **Results**

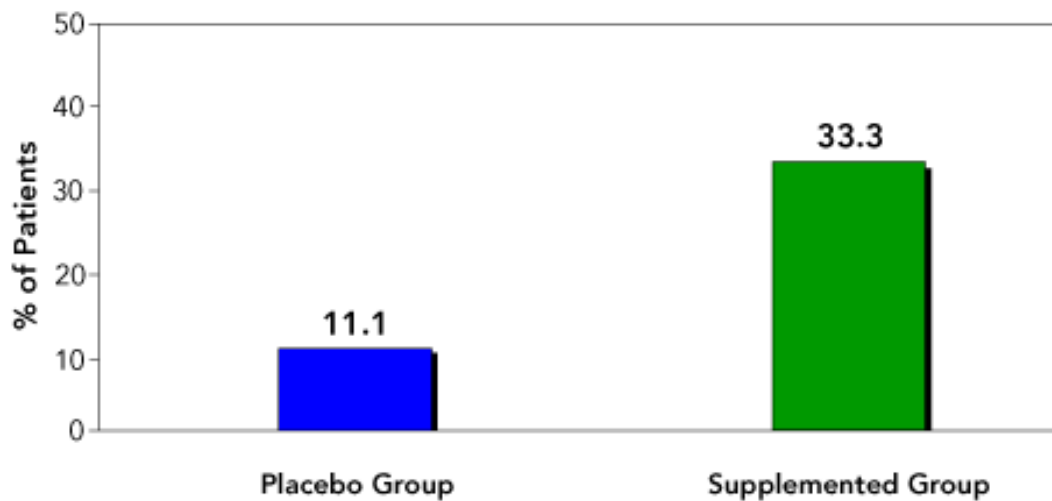
The data analysis demonstrated reduced fracture-healing time associated with experimental supplementation. The fracture healing time in 75% of the supplemented group of patients was 17 weeks or less and 19 weeks or less in 75% of the placebo group of patients. The percentage of patients with fractures healing in 10 weeks or less was 33.3% for the supplemented group and 11.1% for the placebo group.

## **Conclusion**

Fracture healing time can be reduced by the synergistic action of specific nutrients. In addition, the participants reported an improved feeling of well-being with use of the program.

## Effect of Supplementation on Fracture Healing Time

| Criterion  | Supplement Group | Placebo Group |
|--|------------------|---------------|
| Number of patients                                 | 21               | 36            |
| Age range (years)                                  | 15 to 65         | 12 to 75      |
| Mean age (years)                                   | 35               | 32            |
| Healing time (weeks)                               | 14.0±1.1         | 16.9±1.2      |
| 75 <sup>th</sup> percentile healing period (weeks) | 17               | 19            |



Shortened (10 Weeks or Less) Tibial Fracture Healing Time



Radiograph of fracture at reduction



Radiograph of fracture at 12 weeks