The influence of vitamin C on the outcome of ankle fractures. A protocol of double-blind RCT

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Introduction/Purpose: Ankle fracture is one of the most common orthopedics injuries. Poor functional outcome, residual pain and discomfort is a major burden to the patients daily activities. Complex regional pain syndrome (CRPS) is one of serious complication after orthopedics injuries. The incidence of CRPS is 0.3% after foot and ankle surgery. CRPS is well studied in wrist fracture. Vitamin C has been proposed to improve outcomes after a distal radius fracture by promotion of bone and soft-tissue healing and reducing the prevalence of complex regional pain syndrome (CRPS).

We aim to detect the effect of vitamin C on the functional outcome, post op pain, incidence of CRPS, wound healing and fracture healing after an ankle fracture.

Methods: Prospective, Double blind, Randomized control study of 110 subjects (55 subjects in each group). Subjects in study group will receive 500 mg vitamin C for 50 days and standard of care, whereas control group will receive the stander of care alone. Subjects with age from 18-50 years old, with ankle fracture which treated surgically will be recruited, whereas open fracture, Peripheral vascular disease, Allergy to Vitamin C will be excluded. Subjects will be followed up in regular basis for one year. Primary end point will be diagnosis of CRPS and secondary end point will be failure of initial management.

Results: Although CRPS is more common in wrist injuries comparing to ankle injuries, subclinical of CRPS is more common after ankle fracture. Vitamin C showed promising results in decrease the incidence of CRPS in distal radius fracture. Literature lack of studies looking for CRPS and foot and ankle fracture without high evidence of effect of vitamin C on the functional outcome and post op pain after ankle fractures.

Conclusion: We assume that vitamin C will improve functional outcome, decrease post op pain, decrease the incidence of CRPS and improve wound and fracture healing.

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