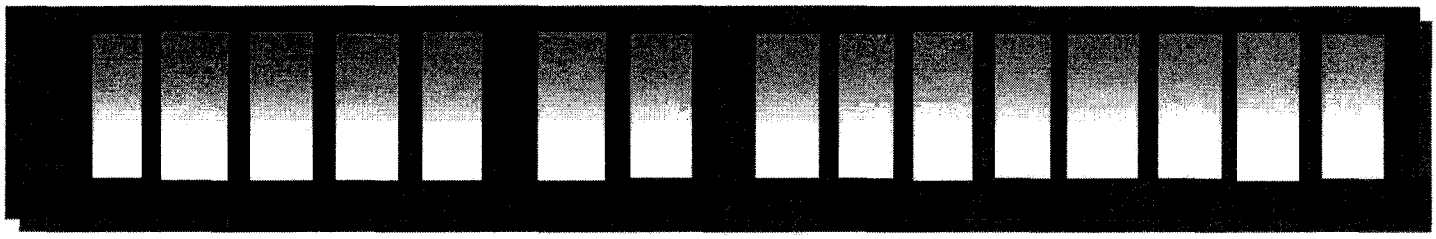
Scottish Executive Health Department Chief Scientist Office



TITLE

Researchers
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Aims

1. To examine the effect of Vitamin C on the functional outcome after distal radial (wrist) fracture
2. To examine the effect of Vitamin C on the rate of Complex Regional Pain Syndrome (CRPS).
3. To examine the effect of Vitamin C on bone healing after distal radial fracture

Project Outline/Methodology

CRPS is a potentially devastating complication of injury resulting in prolonged and often permanent pain, weakness and stiffness in severe cases. Its cause is unknown. A previous study showed that administration of large doses of Vitamin C could prevent its occurrence after wrist fracture. We proposed to extend this study to examine whether Vitamin C could improve healing and recovery in general after wrist fracture.
337 patients with distal radial fractures were randomised to receive either 500mg of Vitamin C or placebo daily for 5 weeks. Randomisation was stratified to separate undisplaced less severe fractures from displaced more severe fractures. Outcome measures were assessed at 6, 12, 26 and 52 weeks after injury and focussed on the Disability Arm Shoulder Hand (DASH) score which depends on the patients' assessment of their outcome, the occurrence of complex regional pain syndrome, complications and testing of movement and strength. Bone healing was also assessed on regular Xrays.

Key Results

There were no differences in the DASH score at any of the time intervals for either displaced or undisplaced fractures. There were a few statistically significant differences in the testing movement and strength but none of these were clinically significant and all showed worse outcomes in the Vitamin C group. There were no differences in the occurrence of CRPS, the complication rates or the time to bone healing between the two groups.

Conclusions

Vitamin C does not improve the patient rated outcome, range of movement, strength, rate of CRPS or bone healing after wrist fractures.

What does this study add to the field?

This study refutes the previous evidence of an advantageous effect of Vitamin C adminstration after wrist fracture.

Implications for Practice or Policy

Vitamin C should not be given routinely to patients with wrist fractures.

Where to next?

We do not propose to test any other fractures with Vitamin C as it is unlikely that there will be any different effect. However the data collected in this study is the largest collection of outcome data on wrist fractures collected prospectively in the world literature. The investigators intend to use this data to develop the ability to predict the outcome of fractures of the wrist and therefore inform future treatment decisions.

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