The Effect of Post-operative Vitamin C on Pain, Fatigue and Quality of Life

Lyndsey Webb DNP, RN
Samford University

EVIDENCE OF THE PROBLEM
• Pain, fatigue, and reduced quality of life following surgical procedures are well-documented.
• Adequate treatment of post-operative pain and fatigue supports rehabilitation efforts. However, opioid monotherapy has potential for over-use or abuse.
• Vitamin C requirements in surgical patients are increased as a result of oxidative stress.
• Potential benefit in pain and fatigue reduction due to the neuroprotective and antioxidant properties of vitamin C has been reported.

PURPOSE OF PROJECT
The purpose of this project was to assess the effect of post-operative Vitamin C administration on:

1. Pain
2. Fatigue
3. Quality of Life

METHODOLOGY
• Clinical trial of supplemental vitamin C added to standard treatment following orthopedic surgery
• A convenience sample was recruited from a private orthopedic practice in Alabama from June to August 2019.
• Intervention group received daily oral Vit C 1000 mg in addition to standard of care opioid treatment
• Control group received no additional therapy

Sample Size
34 participants recruited
14 participants completed pain and fatigue record
  8 in the Intervention group
  6 in the Control group
13 participants completed SF-12 survey
  7 in the Intervention group
  6 in the Control group

FRAMEWORK

RESULTS
PAIN
Days 2 – 7
• REDUCED pain scores in patients taking vitamin C
  2 week follow up
• REDUCED pain scores in patients taking vitamin C
  No adverse reactions reported

PAIN SCORES

FATIGUE
Day 1-Day 7
• REDUCED fatigue scores in patients taking vitamin C
  2 week follow up
• REDUCED FATIGUE scores in patients taking vitamin C
  No adverse reactions reported

FATIGUE SCORES

FS12 (QUALITY OF LIFE)
NO statistically significant difference (p>0.5) in the FS12 scores of the intervention group compared to the control group at the 2-week post-operative visit

LIMITATIONS
• Small sample size due to non-completion of required reporting and follow-up
• Participants were not blinded to Vitamin C

IMPLICATIONS FOR PRACTICE
PAIN & FATIGUE
• A reduction in both pain and fatigue scores were noted in patients taking vitamin C supplementation in addition to opioid therapy compared to patients on opioid therapy alone.
• No adverse reactions were encountered, and Vitamin C therapy is inexpensive.
• Further study is warranted, but this study suggests that vitamin C can be a safe, low-cost adjunctive therapy to improve pain and fatigue control post-operatively.

QUALITY OF LIFE
• Quality of life may need to be evaluated at a longer interval post-operatively.
• Pain and fatigue may not be the only factors which impact quality of life post-operatively.

ACKNOWLEDGEMENTS
Dr. Andrea Collins
Dr. Jeffrey Dugas
Jessica Key