Improving Wound Dehiscence with Juven Supplementation in Podiatric Amputation Patients

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INTRODUCTION

- Surgical site dehiscence is a significant challenge for podiatric amputation patients. High rates of diabetes, vascular disease, smoking, malnutrition, and obesity compromise surgical site healing often leading to increased rates of infection and dehiscence [1]. Surgical patients with insulin dependent diabetes, are at an increased risk of postoperative complications including wound infections, impaired wound healing, reoperation, and readmission [2].

- Post-operatively, patients with surgical site dehiscence are nearly 13 times more likely to develop a subsequent infection and nearly 7% more likely to require higher level amputation in addition to longer healing times and longer hospital lengths of stay than patients with intact surgical sites. This makes perioperative optimization critical in preventing these complications [3].

- Patients identified as needing amputation within the foot often require surgery within three to ten days of presentation to the clinic/hospital, significantly limiting opportunities for comprehensive preoperative optimization.

- Modifiable risk factors that can be addressed in the immediate perioperative period should focus on improved surgical healing. Supplementation with arginine, glutamine, and β-hydroxy- β-methylbutyrate (HMB) in the perioperative period has been shown to significantly reduce postoperative complications, improve wound healing, and shorten length of hospital stay. [4].

- Saint Francis Hospital now has a perioperative care pathway in the Podiatry Clinic that provides nutritional support before and after surgery to minimize complications and accelerate patient recovery. It involves the use of a nutritional supplement called Juven. Juven is a therapeutic nutritional drink mix designed to support wound healing and fight muscle loss by promoting collagen production, improving blood flow and protecting tissue. It is used for chronic wounds, surgical incisions, burns, and pressure ulcers. It is an amino acid supplement containing three main nutrients, (Glutamine, Arginine, and HMB) that have been shown to improve healing in patients with both chronic and surgical wounds.

AIM

This quality improvement project will evaluate the impact of perioperative nutritional supplementation with Juven® on rates of surgical site dehiscence in podiatric patients undergoing amputation within the foot with primary closure at Saint Francis Hospital.









Photos by Sarah Rabbett, APRN

RESULTS

A total of seven participants have been enrolled in the Juven® observational cohort thus far. A total of 39 participants were included in the retrospective cohort prior to the implementation of the Juven supplementation protocol.

STUDY PROCEDURES AND METHODS

This is a prospectively collected observational study with a retrospective arm. It evaluates surgical outcomes before and after the implementation of a perioperative nutritional supplementation program using Juven®.

Adult podiatric patients undergoing surgical amputation within the foot with primary closure at Saint Francis Hospital are included. Amputation procedures include digital, ray, and trans-metatarsal amputations.

Participants are divided into two cohorts. One group will receive Juven® supplementation for up to one week prior to surgery and two weeks post-operatively as part of a standardized perioperative protocol in the podiatry clinic. The comparison cohort consists of patients treated prior to implementation of this practice change from the same podiatry clinic. This data was retrospectively collected.

Patients meeting study criteria are educated on the Juven® protocol and given an information sheet. If the individual agrees to participate in the study their data will be collected and a Juven supplement tracking form is given to the patient. Participants also fill out the PROMIS physical function questionnaire at this time. Patients are instructed to consume the supplement according to protocol and asked to track the doses taken on the tracking form.

Participants return to the office one to two weeks after surgery for a wound assessment and again at four weeks at which time the Bates Jensen Wound Assessment Tool (BWAT) will be utilized. The patient will be asked to fill out the post-operative PROMIS-PF questionnaire and the supplement tracking forms will be collected at that time.

This study was approved by the Trinity Health IRB and is actively collecting data. Review and analysis to follow.

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