Identifying Malnourishment in Geriatric Patients With Nutritional Screenings to Improve Surgical Outcomes

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The elderly are considered to be a higher surgical risk and tend to have more serious comorbidities that can increase the risk of complications in the postoperative period. Nutritional status in the elderly has been determined to be a strong predictor of poor outcomes, especially in patients with hip fractures. Research has demonstrated a relationship between low nutritional status scores, low serum albumin levels, and poor surgical outcomes including a higher incidence of mortality within one month postoperatively in those undergoing hip surgery alone. With an estimated 2/3 of the elderly population at risk for malnutrition remaining undiagnosed by those providing care to this population, preoperative functional and nutritional assessment and optimization is needed prior to surgery to minimize surgical risks. Hospital length of stays for those malnourished were noted to be approximately 2 weeks longer at 34 days compared to 20 days for those adequately nourished and 26 days for those considered to be at risk for malnutrition. Nutritional optimization can improve patient outcomes and improve quality of life by decreasing the risks of surgical complications, decreased mobility postoperatively, and a loss of independence. The purpose of this project is to determine if surgical outcomes are influenced by geriatric patients identified as malnourished or at risk of malnourishment by pre-operative screening with the Mini-Nutritional Assessment (MNA) tool. The patient population will consist of geriatric patients aged 65 years and older presenting for preoperative assessment for surgical procedures. This quality improvement study will investigate if preoperative screening for malnutrition using the MNA tool, identifies a significant number of this population at risk for malnutrition, compared to those not at risk for malnutrition. In this study we will determine if the MNA tool is adequately capturing those at risk for malnutrition, and if identifying these patients and the surgical team of their nutritional status, influences surgical outcomes in regards to postoperative complications, prolonged hospital length of stay and mortality rates. This project is pending UAB Institutional Review Board QI designation.
Keywords:
nutritional, malnutrition, elderly and perioperative

References:

Abstract Summary:

This project is to determine if geriatric patients identified as malnourished or at risk of malnourishment by pre-operative screening with the Mini-Nutritional Assessment (MNA) influence surgical outcomes within 30 days of surgery for patients 65 years old and older

Content Outline:

Content Outline Example (this format is an example only, there is NOT a required format)
I. Introduction
   A. Example: The increase of geriatric patients having both elective and non-elective surgeries is associated with an increase in morbidity, mortality, and complications. **Although numerous**
Factors can contribute to these risks, there is evidence demonstrating a correlation between poor nutrition and adverse surgical outcomes in elderly patients.

B. Example: The elderly population is considered a higher surgical risk and tend to have more serious comorbidities including hypertension, diabetes, respiratory and cardiac illnesses that can increase the risk of complications in the postoperative period.

II. Body
A. Main Point #1 In the review of literature, there was evidence of a significant relationship between malnourishment and increased risks of perioperative complications, delayed healing after surgery, and the risk for developing pressure ulcers or other wounds.
1. Supporting point #1
   a) Nutritional status in the elderly has been determined to be a strong predictor of poor outcomes, especially in patients with hip fractures. Nutritional optimization can improve patient outcomes and improve quality of life by decreasing the risks of surgical complications, decreased mobility postoperatively, and a loss of independence.
   b) Research has demonstrated a relationship between low nutritional status scores, low serum albumin levels, and poor surgical outcomes including unplanned or prolonged mechanical ventilation, increased infections including sepsis, longer hospital stays, an increase in the need for assisted living, decreased mobility, as well as a higher incidence of mortality within one month postoperatively in those undergoing hip surgery alone.
2. Supporting point #2
   a) Malnutrition screening for geriatric patients aged 65 years and older should be performed pre-operatively for all elective surgeries.
   b) Early identification of malnutrition in elderly patients presenting for surgery is crucial to optimize their nutritional status when possible prior to undergoing surgical procedures in order to improve surgical outcomes.
B. Main Point #2 With an estimated 2/3 of the elderly population at risk for malnutrition remaining undiagnosed by those providing care to this population, preoperative functional and nutritional assessment and optimization is needed prior to surgery to minimize surgical risks.
1. Supporting point #1
   a) Research has estimated that as many as 40% of geriatric patients hospitalized were malnourished, and over half of the patients in rehabilitation facilities were malnourished. Other studies have estimated the prevalence of malnutrition among hospitalized geriatric patients to be as high as 60%.
   b) Hospital length of stays for those malnourished were noted to be approximately 2 weeks longer at 34 days compared to 20 days for those adequately nourished and 26 days for those considered to be at risk for malnutrition
2. Supporting point #2
   a) Research studies have indicated that an increase of 40g of protein or 400 kcal per day resulted in increased serum albumin levels. The use of supplemental proteins resulted in a decrease in post-op complications, oral nutritional supplements containing 20% or more of total energy protein improves long-term outcomes for surgical hip
fracture patients, a 25% decrease in the risk of pressure ulcer development, as well as decreasing the risks of falls in those over the age of 65. 
b) Early identification of malnutrition in the geriatric population allows for nutritional optimization preoperatively as well as increasing awareness of potential complications related to malnutrition.

C. Main Point #3 The Mini-Nutritional Assessment Tool (MNA) has proven to be reliable in specificity and sensitivity as well as predicting outcomes when compared to the clinical status of geriatric patients.

1. Supporting point #1
   a) The MNA is currently being used preoperatively to determine if a patient is deemed malnourished or at risk for malnourishment.
   b) This project will investigate if the MNA tool is effectively identifying the number of patients who are malnourished.

2. Supporting point #2
   a) If it is determined that a patient is at risk for being malnourished, the surgeon will be notified via email to determine if the patient needs an inpatient geriatric consult.

III. Conclusion
A. Example We will be determining if the MNA tool is an effective tool for identifying patients at risk for perioperative complications related to malnutrition.

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