

## Abstract

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### ANEMIA SEVERITY AFFECTS OUTCOMES OF PATIENTS UNDERGOING COLORECTAL CANCER SURGERY WITHIN AN ENHANCED RECOVERY AFTER SURGERY PROGRAMME

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#### Objectives:

Anemia has been shown in studies to impact complication rates and length of stay for patients undergoing colorectal cancer surgery. However, there is still no consensus on optimization of anemia pre-operatively within the ERAS colorectal surgery protocol. Our study aims to determine whether severity of anemia affects colorectal cancer surgery outcomes within an ERAS protocol.

#### Methods:

Data prospectively collected in the ERAS Interactive Audit System (EIAS) for patients undergoing elective colorectal cancer surgery from March 2016 to August 2017 in a tertiary hospital in Singapore was analyzed retrospectively. Based on the classification for anemia severity as defined by World Health Organization, patients with mild anemia were compared to those with moderate to severe anemia. Risk adjustment was performed for possible confounders using propensity score matching. The primary outcome measure was length of stay. Secondary outcomes were post-operative complications and readmission rates.

#### Results:

A total of 271 elective colorectal cancer resections were performed between March 2016 to August 2017, out of which 156 (57.6%) patients were identified to be anemic. 88 (56%) patients had moderate to severe anemia. Patients with mild anemia had a shorter length of stay as compared to those with moderate to severe anemia (7.3 vs 10.2 days,  $p=0.04$ ). In addition, it was found that patients with moderate to severe anemia had a 2.42 (95% CI 1.35 to 4.33,  $p=0.001$ ) times risk of complications as compared to the mild anemia group. Using general linear model, it was also demonstrated that patients who received blood transfusion had their stay extended by an average of 1.59 ( $p<0.05$ ) days.

#### Conclusions:

Our results suggest that even within an ERAS Program, preoperative moderate to severe anemia is associated with worse clinical outcomes. As such, preoperative optimization of hemoglobin in patients with moderate to severe anemia should be an important part of the preoperative management of patients.

#### References:

