

## Assessment of effect of Anaemia on recovery in surgical patients: An observational study

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### ABSTRACT:

**Background:** Anaemic patients frequently proceed to surgery without considered assessment and management of this risk factor for adverse outcome. Hence; the present study was conducted with the aim of assessing the effect of Anaemia on recovery in surgical patients.

**Materials & methods:** 100 anaemic patients were randomly enrolled in the present study. Complete demographic and clinical details of all the patients were obtained. Thorough history of all the patients was recorded. The line of treatment was also recorded. Haemoglobin estimation was done by Acid haematin method and according to haemoglobin patients were divided in mild, moderate and severe. Recovery profile of all the patients was assessed.

**Results:** Mean hospital stay among patients with haemoglobin levels of Less than 6 gm% was 29.4 days while among patients with haemoglobin levels between 6 to 8.99 gm%, mean hospital stay was 21.8 days. Mean hospital stay among patients with haemoglobin levels between 9 to 10.99 gm% and between 11 to 12.5 gm% was 12.3 days and 8.5 days respectively. Significantly longer hospital stay days were associated with patients with more severe degree of anaemia.

**Conclusion:** Severity of Anaemia affects the recovery profile in surgical patients.

**Key words:** Anaemia, Surgical

### INTRODUCTION

Anaemic patients frequently proceed to surgery without considered assessment and management of this risk factor for adverse outcome. The current mainstay of management for anaemia in the older surgical patient, allogenic blood transfusion, can contribute to negative outcomes and is increasingly avoided where possible. Physicians are often asked to advise on

optimizing anaemic patients preoperatively. The advice provided varies widely between physicians and anaesthetists or surgeons managing the same patient group. All those involved in preoperative optimization and postoperative management of older surgical patients should ensure that a considered and consistent approach to anaemia is part of routine management.<sup>1-3</sup>

The blood is the most precious fluid in the body, a fact expressed in such common term as —The life blood. It is not surprising therefore, that from very early times we find reference to the value of blood. It is interesting to note that many of the diseases reflect is ‘Anaemia’ a pathological state which results from the quantitative mobility of the organ to transport oxygen to tissue that is to say lack of oxygen carrying capacity of various diseases amongst these most notable are malignancies, burn and other condition of blood loss. In our hospital surgical patients are often anemic. They do not attend hospital primarily for anaemia, but they come for some other surgical conditions.<sup>4-6</sup> Hence; the present study was conducted with the aim of assessing the effect of Anaemia on recovery in surgical patients.

## **MATERIALS & METHODS**

The present study was conducted with the aim of assessing the effect of anaemia on recovery in surgical patients. 100 anaemic patients were randomly enrolled in the present study. Complete demographic and clinical details of all the patients were obtained. Thorough history of all the patients was recorded. A clinical examination was done to assess general condition of patients and systemic disorder. Principles of emergency management were followed rigidly keeping in view patency of airway, breathing and circulation of patient. Blood samples were obtained and antibiotics were started as indicated by surgical problem. The line of treatment was also recorded. Haemoglobin estimation was done by Acid haematin method (Sahli’s Haemoglobinometer) and according to haemoglobin patients were divided in mild, moderate and severe. Recovery profile of all the patients was assessed. All the results were recorded and analysed by SPSS software.

## **RESULTS**

A total of 100 patients were analysed. Mean age of the patients was 48.6 years. Out of these 100 patients, 63 were males and 37 were females. Out of 100 patients, 35 percent of the patients were undergoing surgical intervention because of haemorrhoids while 31 percent of the patients were undergoing surgical intervention due to presence of surgical and infected wound. In 51 percent of the patients, haemoglobin concentration was between 9 to 10.99 gm% while in 39 percent of the patients, the haemoglobin levels were between 6 to 8.99 gm%.

Mean hospital stay among patients with haemoglobin levels of Less the 6 gm% was 29.4 days while among patients with haemoglobin levels between 6 to 8.99 gm%, mean hospital stay was 21.8 days. Mean hospital stay among patients with haemoglobin levels between 9 to 10.99 gm% and between 11 to 12.5 gm% was 12.3 days and 8.5 days respectively. Significantly longer hospital stay days were associated with patients with more severe degree of anaemia.

**Table 1:** Demographic data

Variable		Number	Percentage
Age group (years)	Less than 40	42	42
	More than 40	58	58
Gender	Males	63	63
	Females	37	37

**Table 2:** Distribution of patients according to grading of anaemia

Anaemia grading (Hb Levels)	Number	Percentage
Less the 6 gm%	10	10
6 to 8.99 gm%	39	39
9 to 10.99 gm%	51	51
11 to 12.5 gm%	0	0

**Table 3:** Correlation of recovery profile and severity of anaemia

Anaemia grading (Hb Levels)	Mean hospital stay (days)	SD	p- value
Less the 6 gm%	29.4	6.2	0.00 (Significant)
6 to 8.99 gm%	21.8	7.3	
9 to 10.99 gm%	12.3	6.7	
11 to 12.5 gm%	8.5	5.3	

## DISCUSSION

People who are anemic develop symptoms caused by the inadequate delivery of oxygen to their body tissues. This can vary from simple fatigue to death according to the nature and severity of the anaemia. The condition is far more common in women than in man. The most common type of anaemia is iron deficiency anaemia, which occurs when the body's need for iron increases, as during childhood and in pregnancy or when there is insufficient iron in the diet or there is chronic loss of blood.<sup>7-9</sup> Hence; the present study was conducted with the aim of assessing the effect of Anaemia on recovery in surgical patients.

A total of 100 patients were analysed. Mean age of the patients was 48.6 years. Out of these 100 patients, 63 were males and 37 were females. Out of 100 patients, 35 percent of the patients were undergoing surgical intervention because of haemorrhoids while 31 percent of the patients were undergoing surgical intervention due to presence of surgical and infected wound. In 51 percent of the patients, haemoglobin concentration was between 9 to 10.99 gm% while in 39 percent of the patients, the haemoglobin levels were between 6 to 8.99 gm%. Sonwani B et al assessed randomly selected 200 anemic patients. Patients admitted in routine or emergency time thoroughly interrogated for personal information. A thorough clinical examination was done to assess general condition of patients and systemic disorder. Majority of anemic patient were of malignancy (41%). Next common group of hemorrhoid (21.5%), minimum cases were for infected wound (7.5%). The incidence of malignancy and severity of anaemia both were more in female as compared to male. Study subjects were distributed nearly equal numbers between age 31 to above 60 yr. It was observed that severity

of anaemia increased with the percentage of burn. Impairment of wound healing was noted in moderate degree of anaemia (6-10.9%), superficial gapping 40% incomplete dehiscence 8% was noted and severe anaemia (below 6 gm % Hb) all the cases noted complete dehiscence. Majority of the cases 67-87% were infective groups belongs to moderate and severe degree of anaemia. Anaemia in surgical patients can be prevented by early diagnosis and treatment of lesion where bleeding is present.<sup>8</sup>

In the present study, mean hospital stay among patients with haemoglobin levels of Less the 6 gm% was 29.4 days while among patients with haemoglobin levels between 6 to 8.99 gm%, mean hospital stay was 21.8 days. Mean hospital stay among patients with haemoglobin levels between 9 to 10.99 gm% and between 11 to 12.5 gm% was 12.3 days and 8.5 days respectively. Significantly longer hospital stay days were associated with patients with more severe degree of anaemia. Anaemia has a negative impact on medical postoperative outcomes, functional status and quality of life (QOL) in both elective and emergency surgical populations. Within elective cardiac and non-cardiac surgical populations preoperative anaemia is associated with increased risk of perioperative cardiac events, infective complications, respiratory failure, and renal and central nervous system adverse outcomes. Furthermore, and particularly relevant to older surgical patients, a postoperative haematocrit of <30% in patients aged over 50 undergoing major elective non-cardiac surgery is an independent predictor of postoperative delirium. This is important as delirium itself carries a risk of increased mortality, morbidity, longer length of hospital stay and higher chance of institutionalization. In elective patients undergoing joint replacement, the effects of anaemia on QOL are mixed. Initial studies suggested that perioperative anaemia adversely affected QOL, but this finding was not confirmed by two larger and more recent studies which showed no association between postoperative haemoglobin and QOL.<sup>3-7</sup>

As iron deficiency is an almost invariable characteristic of post-operative anaemia, iron supplementation is the main target of a PBM-based approach. Management of iron deficiency with oral iron in the immediate post-operative period has a very limited role due to poor absorption, duration of action and considerable side effects, and is not currently recommended. In contrast, post-operative administration of intravenous iron, with or without erythropoiesis-stimulating agents, has been found to be a safe and effective way for correcting anaemia after a variety of major operations.

## CONCLUSION

Severity of Anaemia affects the recovery profile in surgical patients.

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