

# Response of Nutritional Support on Incisional Wound Healing in Malnourished Subjects with GIT Surgery

AHMAD HASSAN KHAN<sup>1</sup>, MUZZAMIL RIAZ MALIK<sup>2</sup>, KHALID MAHMOOD<sup>3</sup>, MUHAMMAD ARSHAD<sup>4</sup>

<sup>1</sup>Associate Professor Surgery, Sargodha Medical College, Sargodha

<sup>2</sup>Assistant Professor. Nephrology, Sargodha Medical College, Sargodha

<sup>3</sup>Assistant Professor Surgery, Sargodha Medical College, Sargodha

<sup>4</sup>Associate Professor of Pediatrics, Sargodha Medical College, Sargodha

Correspondence to Dr. Ahmed Hassan Khan, Associate Professor Surgery

## ABSTRACT

**Aim:** To see the response of pre and post operative support of nutrition healing of incisional wound in malnourished subjects having gastrointestinal surgery. **STUDY DESIGN:** Descriptive

**Setting:** Surgical ward Services hospital/ SIMS, Lahore.

**Duration:** six months (14-12-2009 to 13-06-2010).

**Methodology:** 120 subjects were admitted through OPD who fulfill inclusion criteria. They were screened for malnutrition by using BMI, SGA rating. Nutrition was given by calculating the calories 3-7 days pre operatively. Nutrition continues in hospital stay post operatively.

**Results:** 120 patients, 53(44.2%) were males and 67(55.8%) were females. According to SGA rating, 62(51.7%) patients were mildly malnourished and 58 (48.3%) were severely malnourished. Mean values of wound healing were 11.3±2.1days with ranges of 8-20 days. Mean Hospital stay was 20.6±7.3 days with ranges of 7-45 days.

**Conclusion:** Nutritional status is crucial to see results of patients having surgery. There is strong correlation of malnutrition and impaired wound healing.

**Key words:** Malnutrition, Incisional wound, Healing response

## INTRODUCTION

Since 1930, the clinical and experimental studies have demonstrated the dependence of occurrence of postoperative complications on the nutritional status of patients<sup>1</sup>. Gastrointestinal surgical patients are at risk of nutritional deficit because of inadequate nutritional intake, surgical stress and increase in basal metabolic rate up to 40%<sup>2</sup>. Poor nutritional status can compromise the function of many organ system including heart, lungs, kidneys and gastrointestinal tract. Immune function and muscle strength are also impaired, leaving these patients more vulnerable to infectious complications and need for post surgical intubation<sup>3</sup>.

## METHODOLOGY

One hundred and twenty patients were admitted through OPD according to inclusion criteria. Subjects were screened for malnutrition using BMI, SGA. Preoperative nutrition was given for 3-7 days and postoperative nutrition was given during hospital stay. Data was entered and analyzed by SPSS version 12.

### Inclusion Criteria

- Subjects between 20–80yrs undergoing gastro intestinal surgery.
- Malnourished BMI < 20 kg/m<sup>2</sup>
- Recent weight loss >10 -15%
- Risk of malnourishment according to SGA rating B, C

### Exclusion Criteria

- End stage liver or renal disease
- Patient in comatose stage
- Patients with cholecystitis or ventral hernia

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## RESULTS

The detail of results is given in tables 1-6

Table 1: Gender distribution

Gender	n
Male	53(44.2%)
Female	67(55.8%)
Total	120(100%)

Table 2: Malnourishment with SGA and BMI

SGA rating	n
Mild	62(51.7%)
Severe	58(48.3%)
BMI	
Mild	69(57.5%)
Moderate	16(13.3%)
Severe	35(29.2%)

Table 3: Healing time and hospital stayu

Healing (Days)	N
Mean ± SD	11.3 ± 2.1
Ranges	8-20
Hospital stay (Days)	
Mean ± SD	20.6 ± 7.3
Ranges	7-45
TOTAL	120

Table 4: Nutrition given

Nutrition	Preop	Postop
Eternal	36(30%)	-----
Parental	47(39.2%)	37(30.8%)
Both	37(30.8%)	83(69.2%)
Total	120(100%)	120(100%)

Table 5: Caloric requirements

Calories	n
1500-2000	4(3.3%)
2000-2500	60(50%)
2500-3000	52(43.3%)
>3000	4(3.3%)
Total	120(100%)

Table 6: Hospital stay and BMI

BMI	Mean± SD	Ranges
Mild	20.7±7.8	7-45
Moderate	18.7±5.9	10-30
Severe	21.3±6.98	11-39

## DISCUSSION

Correlation between malnourishment and postoperative complications is very much known<sup>4</sup>. In my study, severe malnourished subjects with subjective global assessment (SGA) and BMI had much healing time and prolonged hospital stay. Haneya M showed poor healing of wound and longer hospital stay in malnourished subjects. The subjects having nutritionally good showed rapid wound healing and small stay in hospital<sup>5</sup>. In another study, it is seen that if malnourished subjects are properly given calories preoperatively, then surgery results are better.<sup>6</sup> Windsor suggested that normal food given before surgery is very important to stop poor wound healing<sup>7</sup>.

In our study, subjects were provided enteral and parental feeding 3-7 days before surgery. Komorowski et al. observed that use of parenteral nutrition in the post op time is not correct in patients without nutritional deficiency<sup>8</sup>. Nutritional calories are only used in severely malnourished subjects. A study by Veterans A et al have shown that in severely malnourished subjects having surgery due to GIT cancer, parenteral nutrition decreases complications<sup>6</sup>.

In our study, malnourished patients with >3000 calories pre and post operatively either enterally,

parenterally showed better outcome in relation with rapid healing of wound and less hospital stay. Papapietro had shown in his study that enteral nutrition is better choice for treating subjects having gastrectomy because of cancer<sup>9,10</sup>

## CONCLUSION

Nutritional status is crucial and there is strong correlation between malnutrition and wound healing.

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