Nutritional Status of Patients Admitted in a General Surgical Ward at a Tertiary Hospital of Punjab

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ABSTRACT
Nutritional assessment, as a method to identify malnourishment, has long been documented as an essential component of patient management which predicts adverse outcomes. The objective of the study was to find out the frequency of malnutrition and its association with the frequency of complications and deaths postoperatively. This study included all patients who were operated upon in a general surgical unit of Mayo Hospital, Lahore from June to August, 2013. Evaluation of 280 patients showed that 112 (40%) of the patients were malnourished, 90 (32%) were at risk of being malnourished and remaining 78 (28%) of the patients had normal nutritional status, according to the Subjective Global Assessment. Thirteen percent (13%) malnourished and 2 (3%) of the normally nourished patients died within 30 days of operation (p=0.001). Incidence of complications in malnourished patients was 23 (20.53%) as compared to normally nourished patients (5.12%, p=0.006). Malnutrition is very common in patients admitted to surgery wards of our hospitals. It adversely affects the outcome of surgical operations by increasing complications and mortality.

Key Words: Malnutrition. Nutritional status. Subjective global assessment. Surgical outcome.

Malnutrition has long been known to predict adverse outcomes like increased morbidity and mortality and decreased quality of life in patients.¹ Worldwide the prevalence of malnutrition is high. Debonis et al. stated that almost half (54.4%) of the patients were at risk of malnutrition, 22.3% were moderately malnourished and 10% were severely malnourished.² In a Chilean study, 37% malnutrition was identified in 528 hospitalized patients; out of those, 32.4% were moderately malnourished and 4.6% were severely deteriorated.³ McWhirter and Pennington from Spain found that malnutrition in hospitalized patients ranged between 30% - 50% and increased as the hospital stay increased and at the time of discharge 75% were affected by worsening in nutrition status during hospitalization.⁴ A study conducted by Wyszynski et al. aimed to find out the prevalence of malnutrition in hospitalized patients by using physical examination and subjective global assessment form.⁵ Forty-seven percent were identified as malnourished, out of which one-forth had severely depleted status. Patients with cancer and infectious diseases were at higher risk. Only 15% had current or usual weight and height recorded.

Malnutrition in hospitalized patients has multiple causes like anorexia, digestive symptoms, therapeutic procedures and drug treatments. In some cases, nutritional status of patients compromises due to lack of knowledge and interest of hospital staff regarding nutrition.

Nutritional assessment is a method to identify malnourishment. Nutritional screening tools like subjective global assessment (SGA) and mini-assessment tools (MNA) are used to assess nutritional status of patients. McClave et al. showed that 48.1% patients were malnourished and 12.5% were severely malnourished.⁶ Correlation showed strong relations among variables like presence of cancer, infection, age and diagnosis. Almost 15% - 70% of the patients were malnourished at the time of admission and 70% of the patients, reported as malnourished, did not receive any nutritional support. Only 7.3% of the patients received nutrition therapy. Prevalence of malnutrition also varies with socio-economic level and duration and severity of disease.

The main aim of this study was to find out the point prevalence of malnutrition in patients admitted in surgical ward. The study also focused on the complications and rate of mortality. This may draw attention of the clinicians to provide early nutritional interventions and improve the quality of life and decrease the incidence of adverse outcomes of the patients.

All operated patients were assessed from June to August 2013 to evaluate the nutritional status of patients admitted in north surgical ward in Mayo Hospital, Lahore. Subjective global assessment form was used to assess the nutritional status of patients. Data were analyzed by using SPSS version 16.

Out of 280 patients, 112 (40%) were malnourished, 90 (32%) were at risk of being malnourished, and 78 (28%) had normal nutritional status. Major diagnostic groups in
Comparison of complications (morbidity) and mortality with their nutritional status.

Table I: Nutritional status of patients and different diagnostic groups.

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Cancer patients</th>
<th>Traumatic patients</th>
<th>Infections</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnourished</td>
<td>26 (46%)</td>
<td>33 (36%)</td>
<td>52 (40%)</td>
<td>112 (40%)</td>
</tr>
<tr>
<td>At risk of malnutrition</td>
<td>16 (29%)</td>
<td>30 (32.6%)</td>
<td>44 (33%)</td>
<td>90 (32%)</td>
</tr>
<tr>
<td>Normal status</td>
<td>14 (25%)</td>
<td>29 (32%)</td>
<td>35 (27%)</td>
<td>78 (28%)</td>
</tr>
<tr>
<td>Total</td>
<td>56 (20%)</td>
<td>92 (33%)</td>
<td>132 (47%)</td>
<td>280</td>
</tr>
</tbody>
</table>

Table II: Comparison of complications (morbidity) and mortality with their nutritional status.

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Complications</th>
<th>Mortality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnourished</td>
<td>Yes 23 (20.53%)</td>
<td>No 89 (79.46%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>At risk of being malnourished</td>
<td>Yes 10 (11.11%)</td>
<td>No 80 (88.88%)</td>
<td>5 (6%)</td>
</tr>
<tr>
<td>Normal status</td>
<td>Yes 4 (5.12%)</td>
<td>No 74 (94.87%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Total</td>
<td>37 (13.21%)</td>
<td>243 (86.76%)</td>
<td>22 (8%)</td>
</tr>
</tbody>
</table>

p-value = 0.006
Chi-square = 10.0293

280 patients included 56 (20%) with cancer, 92 (33%) with trauma, and 132 (47%) had infections like acute appendicitis, diabetic foot, intestinal tuberculosis etc. Malnutrition status was highest in patient with cancer and infections (Table I).

Table data shows that complication rate in malnourished patients was 23 (20.53%) as compare to normal nutritional status patients 4 (5.12%), p=0.006. Results of mortality shows that in malnourished patients, mortality was 15 (13%) as compared to normal nutritional status patients 2 (3%), p=0.001. Thus there was a significant association of morbidity and mortality with nutritional status, and malnutrition increased the frequency of complications and death rate in operated patients.

Through the study, it was concluded that two-third of our patients were malnourished or at risk of malnutrition and only a quarter had normal nutritional status. Other studies have reported similar results. Wachtzberg and Caiaffa reported 48.1% patients with malnutrition; among them 12.5% in the severe malnourished category.7 A study in Jinnah Hospital, Lahore, reported the reasons of malnutrition in surgical patients as unwanted preoperative / postoperative starvation, improper control of infections, lack of proper nutritional assessment and support, improper surgical anesthetic procedure, disease itself, limitation in financial and healthcare system, and non-consideration of minimal invasive techniques.8 They concluded that by modifying above mentioned reasons, significant weight loss and malnutrition can be prevented in surgical patients.

Largest diagnostic group among malnourished patients was the one with cancer. From cancer patients, 39% were severely depleted and only 29% had normal nutritional status. The results were compared with another study by Kumar, that 30% - 87% cancer patients were malnourished.9

Malnourishment among patients led to poor outcome in this study by increasing morbidity and mortality. Hospital stay, surgical site infection, delayed wound healing rate, and formation of fistula/stoma, all were included as complications. Majority of malnourished patients face complications, and expiry rate in malnourished patients were high as compared to normally nourished patients.

Severe malnutrition is very common in our patients; we need to routinely incorporate nutritional assessment method in our preoperative workup of our patients. In severe malnourished patients, a period of nutritional intervention to improve the nutritional status of patients may help lessen the adverse outcomes like complications and mortality. Patients should be treated with nutritional intervention and then the results compared to see the effect of intervention. Currently worldwide, the concept of nutritional support plays an important role in treating critically ill patients, is well established in developed societies; but unfortunately Pakistan falls far behind in this concept and we need continuous effort to establish it as an important part of health delivery systems.

REFERENCES