Early Nutrition Assessment and Intervention Improves Outcomes and Treatment Tolerance in Patients with Esophageal Cancer

A multidisciplinary esophageal clinic devised a nutrition pathway to improve the nutritional management of patients with esophageal cancer.

**Purpose:** Patients with cancer of the esophagus are often malnourished at presentation. Dysphagia, or difficulty swallowing, is the primary symptom in more than 90% of patients, and has a significant negative impact on dietary intake and nutritional status. Malnutrition has been shown to negatively affect treatment response and survival in cancer patients.

**Methods:** The study compared outcomes between two groups: a control group (24 patients) received nutrition support in a reactive manner (referred to the dietitian only after problems arose), and a treatment group (24 patients) received nutrition support proactively upon initial visit to the clinic, with a nutrition intervention pathway started based on their risk level. Each patient’s nutrition risk was assessed and defined as low, moderate or severe. Intervention included preventive advice (low risk), oral nutrition support (moderate risk), and enteral feeding (severe risk). All patients were reviewed and reassessed weekly throughout the treatment course. Refer to the back of this study to review the protocol put in place.

**Results:** This study shows that early nutrition assessment and intervention delivered according to a nutrition pathway had a significant positive effect on nutritional status and treatment tolerance of patients with esophageal cancer during chemoradiation.

### Summary of Study Results:

<table>
<thead>
<tr>
<th>OutcomeAFX</th>
<th>Control Group</th>
<th>Treatment Group (Nutrition Pathway)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients receiving enteral nutrition</td>
<td>33%</td>
<td>54%</td>
<td>0.05</td>
</tr>
<tr>
<td>Weight change during treatment (%)</td>
<td>-8.9 ± 5.9%</td>
<td>-4.2 ± 6.4%</td>
<td>0.003</td>
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<tr>
<td>Patients who had a chemotherapy dose reduction (%)</td>
<td>42% (n=10)</td>
<td>29% (n=7)</td>
<td>0.34</td>
</tr>
<tr>
<td>Patients who completed radiation (%)</td>
<td>50% (n=12)</td>
<td>92% (n=22)</td>
<td>0.001</td>
</tr>
<tr>
<td>Patients who experienced radiation therapy breaks (for those who completed treatment) (%)</td>
<td>33%</td>
<td>27%</td>
<td>0.71</td>
</tr>
<tr>
<td>Patients who had an unplanned hospital admission (%)</td>
<td>75% (n=18)</td>
<td>46% (n=11)</td>
<td>0.04</td>
</tr>
<tr>
<td>Total length of stay for all unplanned hospital admissions (days)</td>
<td>13.5 ± 14.1 days</td>
<td>3.2 ± 5.4 days</td>
<td>0.002</td>
</tr>
</tbody>
</table>
Early Nutrition Assessment and Intervention Protocol

**Nutrition assessment at initial consultation**

- **LOW RISK OF MALNUTRITION**
  - Weight loss up to 5%

- **MODERATE RISK OF MALNUTRITION**
  - Presence of anorexia and/or dysphagia
  - Weight loss >5%

- **SEVERE RISK OF MALNUTRITION**
  - Severe difficulty chewing and swallowing
  - Weight loss >10%

- **NUTRITION EDUCATION**
  - General nutrition education
  - Awareness education of potential problems

**Nutrition assessment at start of treatment**

- **LOW RISK OF MALNUTRITION**
  - Same criteria as above

- **MODERATE RISK OF MALNUTRITION**
  - Same criteria as above

- **SEVERE RISK OF MALNUTRITION**
  - Same criteria as above

- **NUTRITION EDUCATION**
  - Symptom management education
  - Encourage fluid intake

- **NUTRITION INTERVENTION**
  - High protein, high energy diet
  - Symptom management education
  - Encourage fluid intake

**Nutrition assessment following first week of treatment**

- **LOW RISK OF MALNUTRITION**
  - Same criteria as above

- **MODERATE RISK OF MALNUTRITION**
  - Same criteria as above

- **NUTRITION EDUCATION**
  - Provide education as needed

- **NUTRITION INTERVENTION**
  - High protein and/or high energy diet
  - Symptom management education
  - Encourage fluid intake

**Weekly nutrition assessment during treatment for continued care**

- **LOW AND MODERATE RISK**
  - Weight loss <10%
  - Continue to assess weekly

- **SEVERE RISK**
  - Failure to stabilize weight
  - Weight loss ≥10%

- **TUBE FEEDING INTERVENTION**
  - Consider placement of feeding tube before starting chemoradiation treatment

- **TUBE FEEDING INTERVENTION**
  - Consider placement of feeding tube in the first 3 weeks of chemoradiation treatment