Nutritional Building for Elderly Inpatients at Nutritional Risk: A Multidisciplinary Approach

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Background

- Early detection of malnutrition with early intervention may correct patient’s reversible nutritional problem (Napier, 1995; Thomas et al, 2000)
- Nutritional care of elderly patients in hospital has been in the spotlight
- Effort to prevent, identify and manage those who are malnourished and malnutrition need to be addressed
Nutrition in hospital elderly

- Malnourished
- Morbidity and Mortality
- Loss weight at hospital stay
- Length of hospital stay
- Loss weight on discharge
- Malnutrition

Loss weight on discharge
Programme

- **Nutrition and Feeding Enhancement Programme**
  - Ward-based service programme implemented in FYKH in 2006
  - To enhance nutritional building for elderly inpatients at nutritional risk
Objectives

- Early detection of patient at nutritional risk
- Multi-disciplinary approach
- Early intervene to improve nutrition support
- Enhance Nutrition & feeding care

Enhance Nutrition & feeding care
Method

Inclusion Criteria:

- Inpatient; and
- Aged ≥ 65 years; and
- Admitted to Medical and Geriatric Ward; and
- Oral feeding; and
- Medical condition stabilized; and
- Criteria of Malnutrition (Fulfills one or more)

Nutrition Status Parameter by COC Dietetics
Criteria of Malnutrition

- Body Mass Index (BMI) < 18.5 kg/m²
- Serum albumin level (SAL) < 29 g/L
- Recent body weight (BW) loss (Unintentional)
  - > 5% in 1 month or
  - > 7.5% in 3 months or
  - > 10% in 6 months (if available)
- Oral intake- < 50% of offered portion for 1 week
Assessment

- Nutrition Screening
- Feeding Assessment
Nutrition Screening

New admit and oral feed patient

Patient weight on admission

Height measure
/body height/ knee height/ demi span/ arm span/

Calculate BMI

Assess BMI, SAL, BW loss (unintentional)

Detect any patient at risk of malnutrition
Feeding Assessment

- Screen feeding status
- Identify feeding problems
- Develop feeding care plan
Workflow

Is Patient at nutritional risk?
- No: Perform assessment at regular intervals
- Yes: Perform Nutrition Screening

Is there any feeding problem?
- No: Refer Dietitian
- Yes: Perform Feeding Assessment

If feeding assessment is performed, refer MO, ST, Dietitian

Implement Feeding Care Plan

Monitor dietary intake, BW weekly, care plan

Review
Primary Outcome

- Body Weight
- Body Mass Index
- Serum Albumin Level
- Feeding capacity
Analysis Method

- Data were compared before and after the programme (upon discharge)
- Paired-sample t test
- 5% significance level
- Statistical Package for Social Sciences (SPSS 15.0)
Result

- Study period:
  February 2006 to March 2007
  (14 months)

- Subject:
  101 inpatients
<table>
<thead>
<tr>
<th></th>
<th>Pre-</th>
<th>Post-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>46 male; 55 female</td>
<td></td>
</tr>
<tr>
<td>Age (year)</td>
<td>87.10</td>
<td></td>
</tr>
<tr>
<td>LOS (day)</td>
<td>17.45</td>
<td></td>
</tr>
<tr>
<td>BW (kg)</td>
<td>36.55</td>
<td>37.01</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>14.94</td>
<td>15.09</td>
</tr>
<tr>
<td>SAL (g/L)</td>
<td>30.70</td>
<td>31.74</td>
</tr>
</tbody>
</table>
Body Weight

- Overall there was 1.25% increase in BW (mean weight gain=0.462kg)
  - 54 patients gained weight (mean weight gain=1.56kg)
  - 25 patients remained same weight
  - 21 patients loss weight (mean weight loss=1.35kg)
Body Mass Index

Overall there was 1.00% increase in BMI (mean gain=0.152kg/m²)

- 53 patients showed an increase in BMI (mean gain=0.6kg/m²)
- 22 patients remained the same
- 26 patients showed a decrease in BMI (mean loss= 0.6kg/m²)
Overall there was 3.38% increase in SAL (mean gain=0.104g/L)

- 43 patients showed an increase in SAL (mean gain=3.21g/L)
- 40 patients remained no change
- 18 patients showed a decrease in SAL (mean loss=1.38g/L)
Significant Findings

- Body Weight
- Body Mass Index
- Serum Albumin Level
### Paired-sample t tests: BW

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>SD</th>
<th>95% CI of the Difference</th>
<th>p-value (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BW (Pre-Post)</td>
<td>-0.462</td>
<td>1.922</td>
<td>-0.842</td>
<td>0.017*</td>
</tr>
</tbody>
</table>

* Statistically significant at 5% significance level
Paired-sample t test: BMI

<table>
<thead>
<tr>
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<th>SD</th>
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<th>p-value (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (Pre-Post)</td>
<td>-0.152</td>
<td>0.786</td>
<td>-0.307</td>
<td>0.045*</td>
</tr>
</tbody>
</table>

* Statistically significant at 5% significance level
### Paired-sample t test: SAL

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>SD</th>
<th>95% CI of the Difference</th>
<th>p-value (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAL (Pre-Post)</td>
<td>-0.104</td>
<td>3.256</td>
<td>-1.682</td>
<td>0.002*</td>
</tr>
</tbody>
</table>

* Statistically significant at 5% significance level
## Feeding Capacity

<table>
<thead>
<tr>
<th>N</th>
<th>Independent Feed</th>
<th>Dependent/Assisted feed</th>
<th>Oral feed</th>
<th>Enteral feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Pre</td>
<td>23</td>
<td>78</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>26</td>
<td>61</td>
<td>87</td>
</tr>
</tbody>
</table>
Conclusion

- Early detection of those elderly patients who are at nutritional risk could improve nutritional status with early intervention
- Interventions implemented in a structural and multidisciplinary approach
Effective nutrition care

Maintain & support

Early Detection

Early intervention

Raise Awareness of Nutrition care

Multi-Disciplinary Approach

Effective nutrition care
Nutrition screening is a routine part and is the first step of nutritional care.
Thank you